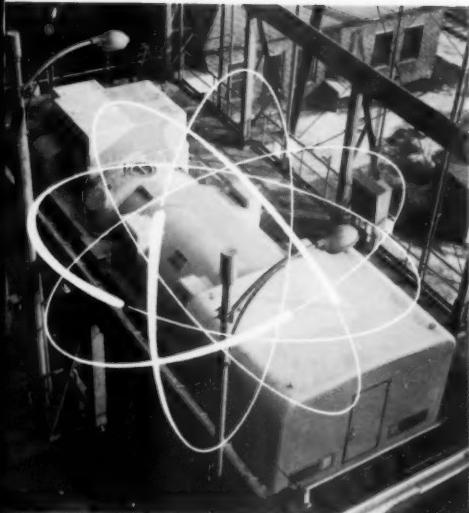


June 12, 1961

PULP & PAPER



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Quality too

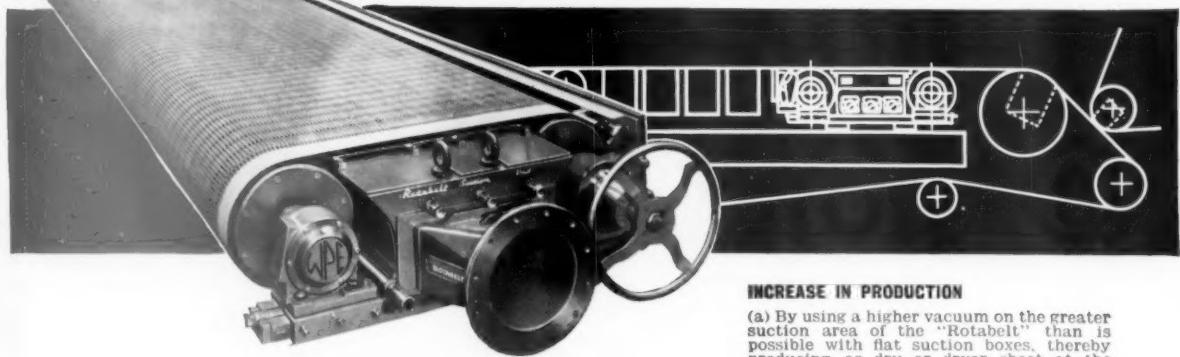
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(c) Because of less wet breaks due to the even dryness of the sheet across the machine and the increase in machine efficiency.

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June 12, 1961

**PULP &
PAPER**

VOLUME 35, NUMBER 12

PUBLISHED EVERY OTHER WEEK

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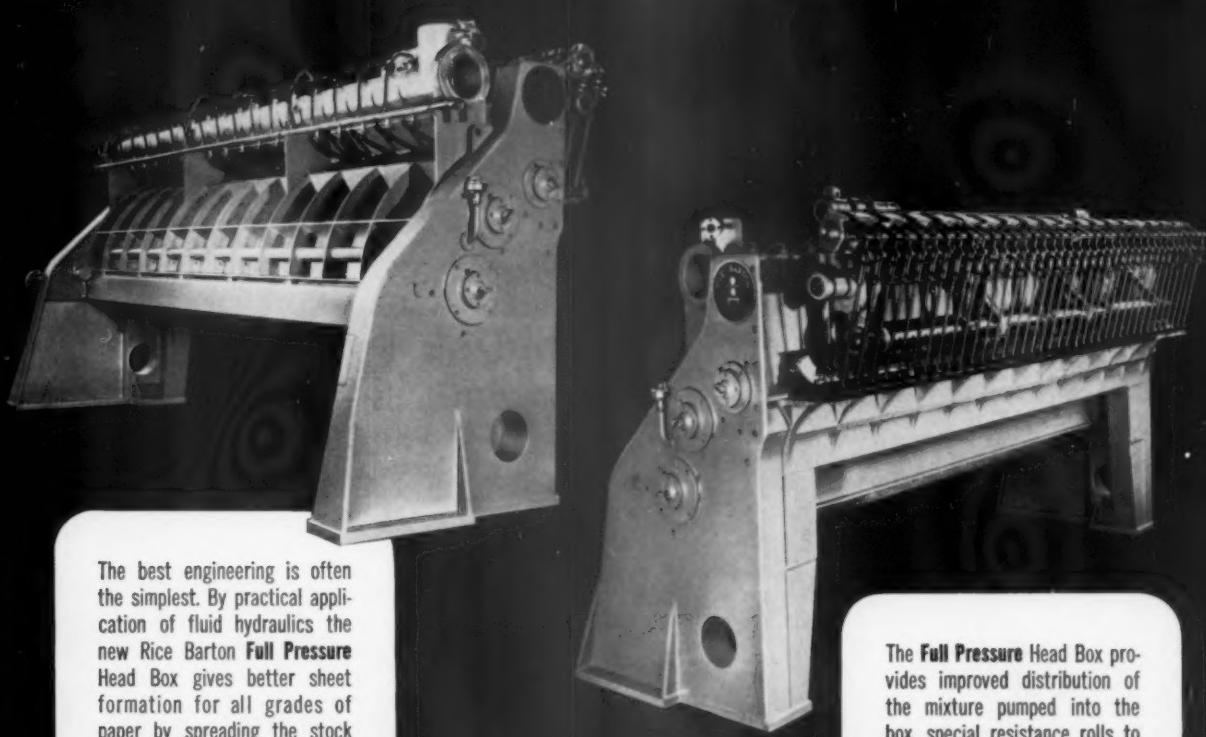
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Better Sheet Formation for all grades of paper with Rice Barton's **Full Pressure Head Box**



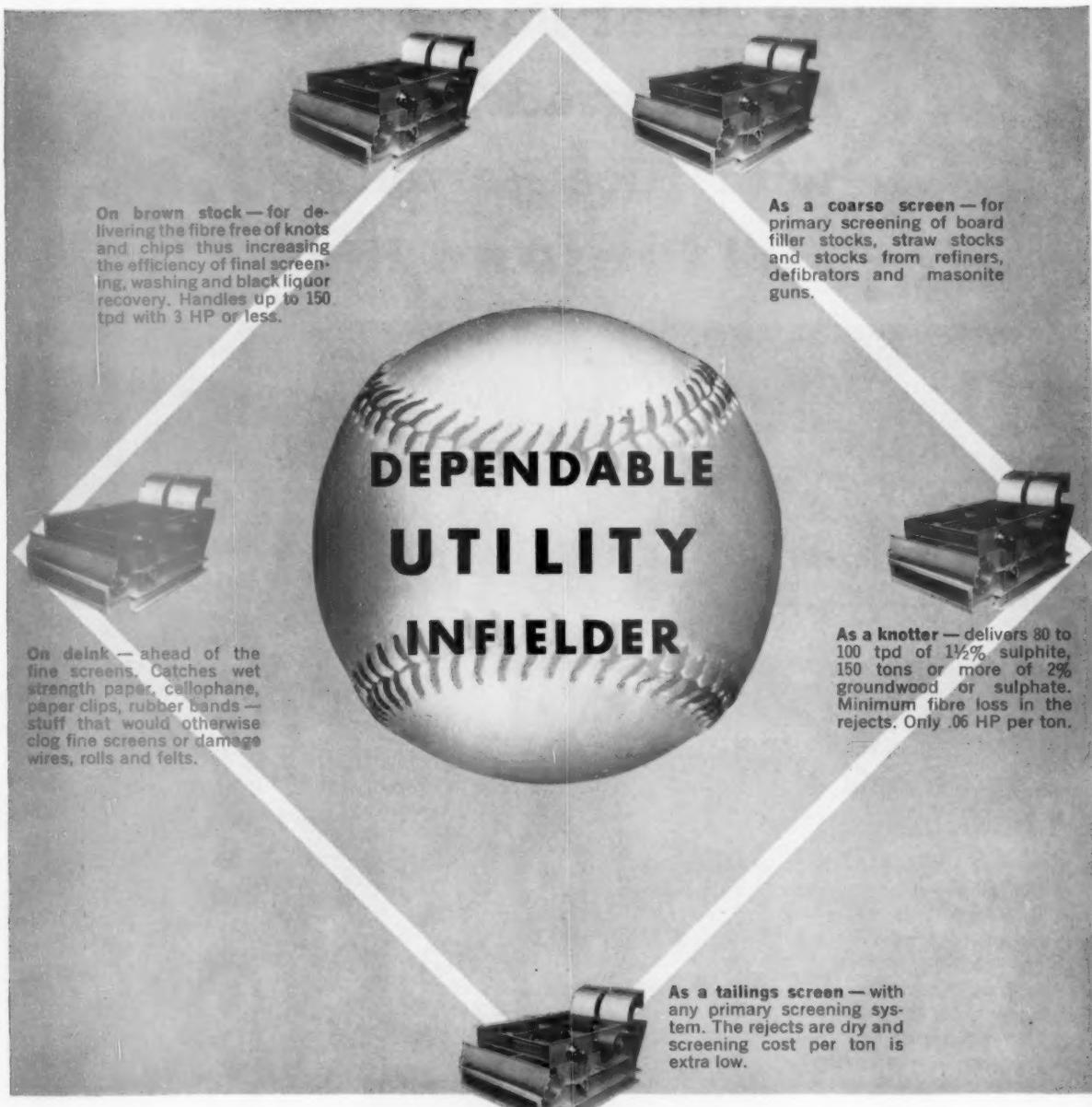
The best engineering is often the simplest. By practical application of fluid hydraulics the new Rice Barton **Full Pressure Head Box** gives better sheet formation for all grades of paper by spreading the stock evenly from the header through the box onto the wire.

The **Full Pressure Head Box** provides improved distribution of the mixture pumped into the box, special resistance rolls to even the flow inside the box and a nozzle adjustment that floats the stock onto the wire the full width of the machine—smoothly, thoroughly mixed, without streaks or boiling. Write for more details.



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NEWS DIGEST...

Russia's paper output rose 138,820 tons in 1960. This was just a little under the increase of 161,898 (both in short tons) for 1959 over 1958. These figures just came from PULP & PAPER's editor in Moscow and these are first official statistics on 1960 to reach this country. This shows Russia's progress under its 1959-1965 Seven Year Plan has not been spectacular. For example, one large U.S. mill makes about 100,000 tons/year. When Russia completes one of the big timber complexes in Siberia, its production could rise sharply. However—

Russia's gains in 1961 will be modest with another 8 or 9% projected. Output of paper and paperboard is scheduled to rise from 3,549,150 short tons in 1960 to 3,812,930 in 1961. Russia's tonnage increases and percentage gains have not been quite as great in the last two years as in several large Western European countries. Pulp production in 1960 rose by 208,560 tons to 3,567,960 short tons. Pulp exports in 1960—only 280,700 short tons, up 44,000. Per capita paper consumption—33.2 lbs., about the same as Mexico. (See WORLD REVIEW NUMBER next month for more information on Russia.)

A third mill for Eureka, Calif., area was the mission of F. C. Riley, timber management consultant of that city as he called on paper industry leaders in New York. Georgia-Pacific and Simpson are two big western timber companies planning future mills in that region. Filtered water from Humboldt Bay water project (Ruth Dam) will support three mills now, he said. Ocean waste dis-

posal minimizes pollution problems and there is plenty of timber for three mills, he added.

"Darn good business in 1963"

is a possibility which William A. Hanway, secretary of International Paper Co., held out in reply to a questioner on the paper industry outlook at a Boston Security Analysts meeting. He said, "We could also get good business in 1962." The tone of the industry is presently good but the flurry of improvement in March did not hold up in April.

What to do with California cotton waste has stirred possibilities in that state for using stalks for paper, linters for pulp. Cotton production is increasing, moving to California from the Southern states where it used to be "king."

Sonoco acquires Newton Paper Co. of Holyoke, Mass. Newton, now a division of Sonoco Paper Products, Hartsville, S.C., makes specialty and coated paperboard.

A de-merger is reported under way between a small Wisconsin wood products firm and a national company. Unusual in this day of mergers, "de-merger" may be announced any day now.

The Warrensburg, N.Y., mill is sold to Warrensburg Board & Paper Corp., headed by Edward Radin and Larry Thompson, to make board. Ex-owner Thomas A. Galante moves to Mechanicville, N.Y., to make MG and lightweights on 186 in. Beloit Yankee.

EXCLUSIVE!

AEC Offers Nuclear Power Plant To Interested Pulp, Paper Mill

By ALBERT W. WILSON, Editor, PULP & PAPER

The Atomic Energy Commission will build a steam-producing pressurized water reactor for industrial use. It will be completed in a little over three years. PULP & PAPER has learned AEC considers a pulp

Because of this delay, and at our suggestion, AEC has agreed to accept "letters of interest" in this project

after the June 19 date originally set by it. But letters are requested by the June 19 date. And interested mills are

and paper mill a highly desirable first user. Although PULP & PAPER knew of AEC's plans several weeks ago, unavoidable delays in clearing information prevented announcement at that time.

urged to act quickly. No commitment is necessary. Letters should be addressed to: Manager, Chicago Opera-

Here's What Users Say about

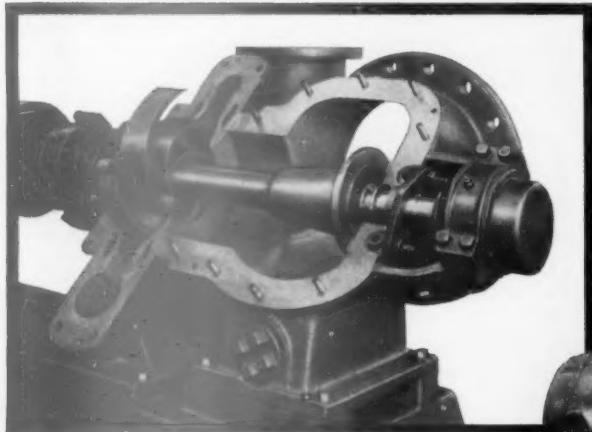


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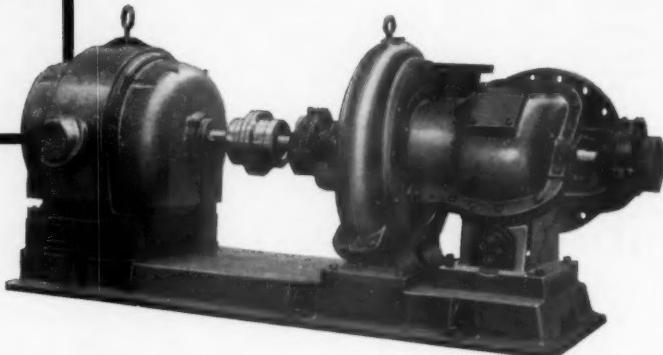
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The Mead Corporation

"They are giving us good service."
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Fibreboard Paper Products Corp.



"Our men like it very much. We have no hesitation in recommending it as a premium pump."

Victor E. Fishburn
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PREPARATION SYSTEMS

BLACK-CLAWSON

.... NUCLEAR POWER

tions Office, U.S. Atomic Energy Commission, Argonne, Ill.

The glamor of nuclear energy has long stimulated hopes for a new industrial era in the high cost power areas, particularly in the Northeast and the Lake States. Here are located the great majority of the nation's paper mills.

A pulp and paper company wishing to buy steam on an interrupted basis now will have the opportunity to buy from this 138,000 pph reactor, which could be installed right next door. It appears certain that a great many pulp and paper companies will be getting out their pencils and doing some fast figuring on power costs—and also future needs.

While AEC officials in Washington, D.C., naturally would not show favoritism toward any industry, PULP & PAPER has learned unofficially that all persons connected with the project are thinking, first of all, of the pulp and paper industry.

These are the highlights of the offer:

1. PULP & PAPER determined without any question that the government officials and others involved look most favorably on a pulp and paper mill as a first user. One important reason:

Pulp and paper mills are in forested, remote, or rural regions, which are considered safer—or at least more desirable—locations for reactors than are cities.

2. Whatever company contracts to buy this power will have an option to purchase the reactor plant itself after five to ten years at a heavily depreciated price. Thus, the company would escape amortization of capital cost. The potential user will make a bid of what he thinks the plant is worth.

3. The cost of this nuclear steam would be much less than coal in most areas and should be attractive to many mills. It is doubtful if Southern mills, using cheap natural gas, would be interested.

4. It is going to be called a "demonstration" reactor, and, like any new machine, there will be shutdowns for checks, etc. So the service will be interrupted. A reactor may appeal mostly to a mill already built, which needs an additional supply of power.

Dr. Frank Pittam, director of the Reactor Development Division, AEC, has played a prominent role in these developments. This particular reactor was designed by Allis-Chalmers. Other companies in the power field have also done much work on nuclear energy

studies and all are moving along rapidly with new developments.

An American pulp and paper mill still may not be the first in the world to use nuclear energy, however. In Norway, five different pulp and paper companies have been participating in a project for a Norwegian atomic energy company, Noratom, in the hope of attaining cheap power from atomic energy production. The plant would be near one mill, which is taking a leading part in the venture. Those interested are Saugbruksforeningen, Borregaard, Union Paper Mills, Hunsfos and Follum mills.

While the costs of the American plant have not been finally decided, there is assurance that the charges for steam would not exceed the estimated cost of a conventional plant, and it is hoped a considerable saving can be offered in some areas.

It will be a low-pressure process heat reactor operating at a thermal power of 40,000 kw. With periodic shutdowns, other sources of steam should be available, preferably from an existing plant. The cost of the uranium burned will be reduced as experience is gained with this new plant.

(Details and a description of the plant to be built are on page 60.)

..... BUSINESS

Fiber Box Industry Mars Its Image

in investment circles by "thoughtless" price cutting

SAN FRANCISCO—The importance of a good profit picture to attract investment capital was hammered home to executives of the fiber box industry by Carl Holzheimer, senior partner, Security Supervisors, at annual spring meeting of Fiber Box Assn. here.

"If it is proper to refer to a basic investment fad at the present time, the fad is concentration on growth," he said. "As long as an investment man looks at a basic industry and continues to label it a 'growth industry,' he will be lenient toward declines, providing the declines are not long continued.

"He is inclined to expect and, in important respects, to help create higher price-earnings ratios. He forgives, perhaps even enthusiastically condones, a very low dividend. But let him conclude that a particular industry is not a growth industry, or that its growth has terminated, and everything

changes, starting with a change in the investment man's interest and approach."

"If one attempts to demonstrate the lack of growth in your industry an unfortunately large number of series would be available. The most striking would be an examination of the relationship between value of shipments and gross national product. In 1950 your product shipments were .371% of GNP; in 1960 they were .354%.

"The decision of investment men to look at your industry as a growth industry or as a non-growth industry is vital. What makes the difference? Profits. Because from an investment point of view a growth industry is an industry where profits increase at rates in excess of the general economy; where declines in recession periods are less than the decline in the economy

and where each successive peak, be it in the FRB index of industrial production or in GNP, is accompanied by a new and preferably higher percentage in earnings per share.

"By this vital test you have failed and failed in so extreme a degree that it would not be improper to refer to it as a calamity and a calamity that requires instant, concentrated attention.

"We have files on 10 of the 20 largest companies in your industry. I intend to point out their sorry profit performance. Seven of the ten show zero earnings growth between 1950 and 1960. Two barely managed to show a small gain between 1955 and 1960. Eight earned no more money in 1960 than they earned in 1955. If we combine the per-share results of these ten companies, simply adding the dollar-per-share earnings of each of the ten companies, we find that total earn-



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ings of \$24.88 for 1955 compared with \$20.17 in 1960. This is serious. This is sad. This is not a background against which you can expect a very favorable view from the investment fraternity.

"If you continue to cut prices whenever times are a little rough, whenever production is declining below 93%, you are saying that you consider yourself a cyclical rather than a growth industry. What are we supposed to think when you as managers of the fiber box industry act in complete refutation of the normal managerial concepts flowing from a true growth business. If you don't believe you are a growth industry, it is not logical to expect investment people to think so. If you act contrary to natural managerial actions flowing from growth, we will necessarily be suspicious."

Touching on pricing problems, the investment analyst cited the steel industry and a statement by U.S. Steel's President Roger M. Blough.

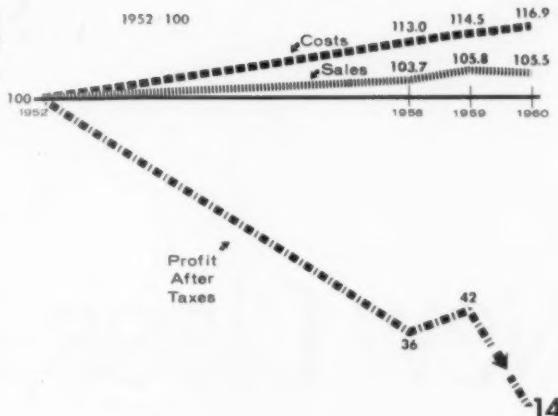
Mr. Blough stated:

"There are right ways and ways not so right. One fallacious idea is thinking that indiscriminate and thoughtless price reduction to get volume or for some other reason, without regard to cost, is a panacea.

"If a price reduction will increase total demand and thereby improve your situation, well and good. But if the objective is to increase your share of existing business, it is well to consider whether any possible result will be momentary or lasting.

"Think what happens when you reduce prices indiscriminately. Will your competition do the same and if you end up with the same proportion of

PROFITS ARE LONE DISSENTER in chart of fiber box sales, costs, profits.



the business you had before, you have accomplished one thing, the weakening of your competitive position by turning a low profit enterprise into a lower profit enterprise or a profitless one.

"This can go on for so long and then research, improvements and innovations are curtailed or never undertaken. Customer service is reduced and the quality of the product suffers—and if carried far enough—the roof caves in and the business folds.

"This is not the right way to compete," challenged Mr. Holzheimer. "You should compete by continuing the contributions that have brought your industry to the prominence it rightly enjoys. You should compete by creating new container forms, by developing new ideas, by improving the already great merchandising techniques you have incorporated into packaging. You should compete by combining new materials in

new ways, by reducing weight, reducing cost, by any number of saving devices, all designed to serve the final consumer better, faster, cheaper and more attractively.

"I urge your industry to give serious consideration to eliminating capacity figures and to stop reporting capacities. Did you ever hear any discussion of automobile capacity? Did it ever occur to anybody to think that General Motors ought to cut their prices because they were operating their plants at this, that or the other percent of capacity. Didn't one rather imagine that GM could make and deliver however many cars they could sell and didn't one expect them to hold a good, fat profit margin except perhaps in extreme depression periods. Forget about capacity. Forget whether your industry is operating at 89% or 94%. Think rather of your costs and the prices necessary to cover them with the profits that provide everything necessary for your continued sound growth." ■

Fiber box profit ride "hasn't been fun"

SAN FRANCISCO—The fiber box industry has been "on one swift toboggan since 1947 and the ride hasn't been too enjoyable," despite increased production. The reason is by now a familiar complaint to the entire pulp, paper and paperboard industry: The cost-price squeeze.

This incisive analysis was made by Alvin A. Newburg, statistician for the Fibre Box Assn. at this group's annual spring meeting here. One glance at the chart at top of page shows why he was upset.

"Look at the direction of the cost line," said Mr. Newburg. "The index for 1960 which is 116.9 means that

our costs have increased 17 points and our sales 5½. Something had to give and it was profits. Profits on 12¢ per thousand square feet on a selling price of \$16.61 is .7%. Not 7%, but .7% after taxes.

"Compare 1960 with other years. 1958 and 1959 were relatively poor and 1952 was not outstanding at 5% after taxes. The index of 14 points for 1960 is quite a shocker. Percentage-wise we have 66.7% less in net profits than we had in 1959 and 86% less than 1952," he pointed out.

"About return on investment let me tell you, this is why we're in

business," he continued. "The 1960 figure turns out to be about 5% before taxes. Return on investment in 1947, perhaps our best year, was 61.5% before taxes. That makes a bum out of 1960."

"Let's hope," he concluded, "that with the greater money supply we have in store for us, along with indications of increased inflation, we will heed some of the rules of the marketplace and reflect our increased costs in our sales prices."

As Mr. Newburg's lament was repeated throughout the industry, mill men in other segments were heard to say, "Amen." ■

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SUBMERSIBLE PUMPS

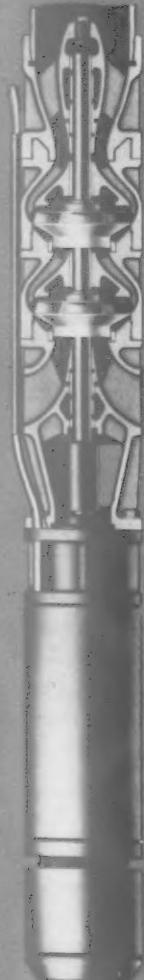
deliver water
economically
consistently
silently
efficiently

The Layne Submersible Pump installation gives you noise free operation because the pump and motor are completely submerged. The Layne Submersible is adaptable to all wells; requires a minimum of space since no pump house is required; eliminates possibility of water contamination; and eliminates the opportunity for vandalism or other accidental mishap or damage.

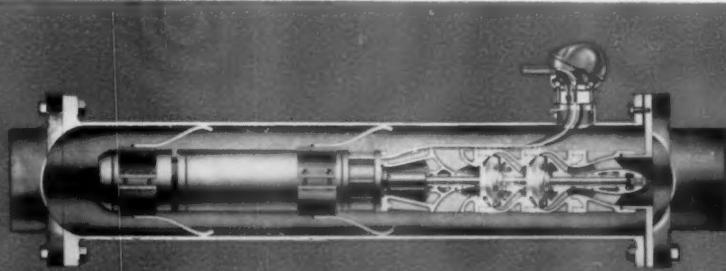
Layne Submersible Pumps are available for wells as small as 6 inches and in capacities from 30 GPM up. For additional information write for free bulletin number 202.

The Layne In-Line Submersible pump provides the answer to many problems in booster pump applications. The pump operates as an integral part of the line and is designed for use by municipalities, industry, such as petroleum and chemical plants and by agriculture. Advantages include: simple installation, no additional space required, continuous service even under flood conditions, and no possibility of surface water contamination.

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Regular Submersible



In-Line Submersible



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Merchants sales so-so for 1st quarter

NEW YORK—The nation's printing paper merchants maintained a 1.37% lead in sales during the first quarter over the same period in 1960. But industrial paper sales lagged 1.11%, according to the National Paper Trade Assn.

Merchants reportedly sold some \$1,669,175,000 worth of industrial papers in 1960 and an estimated \$1,472,829,000 worth of printing papers, says NPTA. This was about 25% of total sales of pulp, paper and allied industries. The figures underscore why the paper merchant is considered important by many paper manufacturers.

One such manufacturer is International Paper Co. Right after his election as president of the world's largest paper company, Lamar M. Fearing said, "The absolute essentiality of the independent paper merchant

is beyond dispute. We are firmly convinced that the best outlet for distribution (of IP papers) is the independent paper merchant or chain of independently-owned paper merchants."

In an obvious reference to the recent acquisition (by some paper mills), of several merchants Mr. Fearing said, "It has been and will be IP's policy to sell its mill brand and allied grades of printing, writing and industrial papers through independent merchants. We should like to work more energetically with those still determined to keep free as independent paper merchants."

This sudden urge to merge with merchants apparently stems from some of the favorable profit reports of merchants last year. Example: Net in-

come of the Saxon Paper Corp. was up 60% on a 24% increase in net sales. Saxon's net sales set a record of \$11,790,471 in 1960 compared with a previous peak of \$9,487,454 in 1959. Net income was \$176,713. Per-share earnings were 35¢ in 1960, compared with 22¢ in 1959.

What's more, Saxon, which consolidated with Berman Paper Corp. in May, 1960, anticipates excellent sales and earnings this year, says Myron P. Berman, president. The acquisition of South Eastern Paper Corp., of Miami, Fla., last December and the Hobson Miller Paper Co., of New York, in January, is expected to add some \$3 million in sales this year, according to Mr. Berman.

Food for thought: Saxon intends further expansion through additional acquisitions, discloses Mr. Berman. ■

. . . . PULPWOOD MANAGEMENT

Helicopter logging becomes reality

GRANTS PASS, ORE.—Timber is to be harvested from a national monument by helicopter. The project, to be undertaken early next year in southern Oregon, will utilize a 9-ton capacity Sikorsky flying crane to transport logs from woods to mill yard.

Although unconventional in many ways, experience from this project will undoubtedly reveal helpful factors concerning economics and physical capabilities of helicopter logging. Depreciation costs of the \$1.7 million transport unit are to be borne by the

U. S. defense department, which will own the machine now being built. A cost survey made by U. S. Forest Service indicates the plan compares favorably costwise with conventional logging—the latter bearing conventional charge-offs.

Helicopter logging costs, at \$369.46 /hr. and 1,000 hrs./yr., are computed at \$35.57 per 1,000 bd. ft. for timber delivered to the mill. Conventional logging, including charges for building roads and disposing of slash, was computed at \$35.47 per M bd. ft. at the

mill. If helicopter costs were based on 1,500 hrs. operation, with defense assuming depreciation charges, the per M cost would be \$32.81.

The project involves removing overripe timber from Oregon Caves National Monument, where aesthetic values take on abnormal importance. Conventional logging methods would involve disturbance of forest conditions. It is assumed the over-ripe timber can be removed by helicopter without materially altering the stand except to improve it. ■

Multiple use incurs inherent dangers

VANCOUVER, B.C.—Increasing penetration of the forest by the public—tourists, campers, fishermen, hunters, bird-watchers—has created a situation of growing seriousness, according to F. A. Harrison, vice pres., Canadian International Paper Co., Montreal.

As immediate past pres., Woodlands Section, Canadian Pulp & Paper Assn., Mr. Harrison told delegates to the fourth annual forest fire research conference on Vancouver Island late in April that the situation called for a stepped-up program of public information, beginning at school level. He

suggested that provision should be made for future meetings of an international character on this type of research, emphasizing the importance of an exchange of ideas between Canada and the U. S., based on experience in the two countries.

Foresters and woodlands managers from all parts of Canada assembled for the conference.

"People everywhere have become suddenly aware of the accessibility of the forest," he said. "Our own industry talks—sometimes too glibly—of multiple use of the forest. Tourists from both

sides of the border are passing up the mundane attraction of larger cities for the pristine beauties of forested areas. Under such impact, however, it is doubtful that the beauties can remain pristine for very long. The invasion by the public is presenting us with problems of fearsome proportions." The greatest: Threat of fire.

Canada's new minister of forests, Hon. H. J. Fleming, promised that troops would be available as an auxiliary forest fire-fighting force whenever required, although he did not promise increased federal financial aid. ■



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Institute head sparks meeting

with controversial report; others review current projects

By A. W. W.

APPLETON, Wis.—Head of the Institute of Paper Chemistry has expressed strong opposition to the growing philosophy that just because educational work is "related to our natural or common interest it must be underwritten or directed at the national level."

President John G. Strange of the Institute made his comments before a keenly attentive and generally approving audience of some 270 top management executives of the American pulp and paper industry. As part of his annual report, it was one of the most penetrating analyses of an increasing tendency toward approval of support for educational and scientific research to date. The executives represent 120 companies which are the sole supporters and "stockholders" in this unique 32-year-old industry research center and graduate school.

He quoted the American Council on Education, former President Eisenhower and the Ford Foundation as a swelling chorus of official and quasi-official bodies which have supported this thesis. About 85% of collegiate programs in science and two-thirds of the nation's total research and development are already underwritten by federal funds, he said.

He said one reason was that "many educators are just plain weary of hunting for funds from private sources." Another reason cited: Concern for national security.

Dr. Strange argued strongly against the assumption that just because "something is in the national interest, it should be centrally financed, or, if an enterprise is centrally financed, it is in the national interest." Carried to logical fulfillment, he said, this "would discard all hard-learned lessons of the past and lead us to a complete and unsuccessful initiation of the authoritarianism we are striking against."

In contrast to this, he said, "the central and moral purpose of education and science is to seek the truth and, as Boris Pasternak has said, the truth is sought by individuals and not by institutions or governments."

Dr. Strange said federal funds would not flow freely—and those who depend on them would have to become politicians. He did not want to

"handcuff" the Institute with his point of view but any approach for funds from government or participation in government projects should be in terms of the Institute's purposes and capacity to make a genuine contribution "rather than as a means of financial leverage."

The plain fact, he said, is that primary support must come from the industry and "if we serve the industry well, we shall also be serving the national interest."

Happiest news for the Institute at this year's conference was the announcement by Dr. Kyle Ward that 24 companies and foundations have subscribed \$125,000 each for five years for a new Pioneering Research Program.

Two projects already underway at the Institute deal with the molecular properties of naturally occurring polysaccharides. One is on the effect of ion binding on properties of low molecular weight polysaccharides, the other on natural hemicelluloses.

Another project has been placed by the Institute in the hands of the University of British Columbia, Canada (chemical structure of non-cellulosic polysaccharides) and a fourth at Ohio State University (on preparation and properties of oligosaccharide derivatives of the cellulose series). Later, other projects under this program will be assigned in Europe as well as in America. Institute trustees launched the new program to extend long range fundamental research. A guide for applicants has been prepared.

Another conference high point was the discussion of political philosophies and economics by Dr. Leonard E. Read, head and founder of the Foundation for Economic Education at Irvington-on-the-Hudson, N.Y. He expounded the theme that individual choice in a free market is the essence of liberty and the source of all real progress.

"I don't care whether you call it Socialism, Communism, Fascism, New Deal, Fair Deal or New Frontier—they all aim to control and own the productive forces of the people," declared Dr. Read.

"Individuals who are intelligent and who love their country" may be able



"Federal funds will not necessarily flow freely . . . (educators must) become politicians."—DR. STRANGE.



"Call it what you will — Communism, Fascism, New Deal, New Frontier . . . they aim to control the productive forces of people."—DR. READ



"Shortage of scientists will become even more severe . . ."—DR. WHITNEY



"No predictable relation between population growth and paper consumption . . ."—MR. MCLEOD

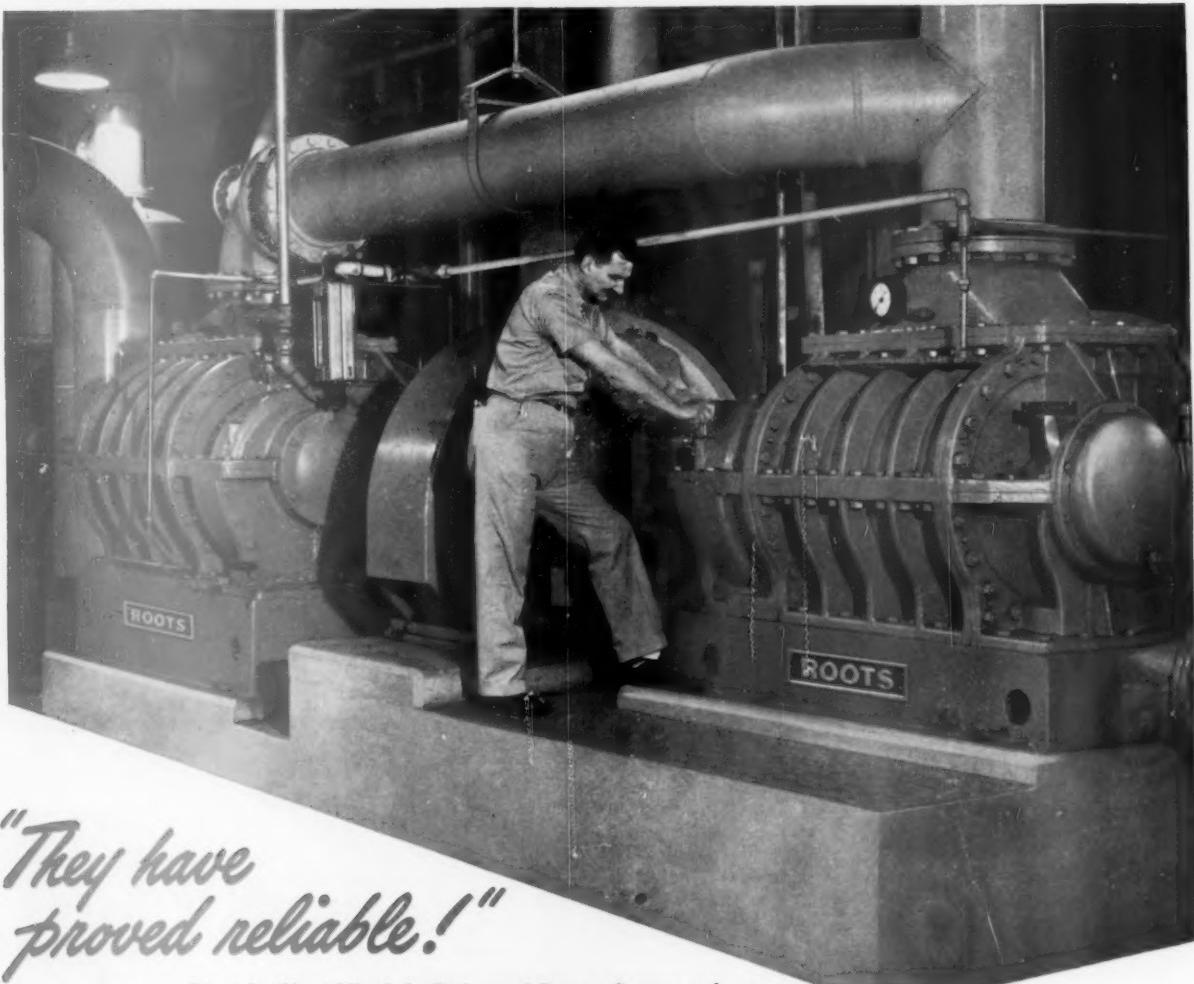


"\$125,000 annually to assign at home and abroad . . ."—DR. WARD

to stem the tide of government control and intervention, he said. "Executives must never endorse government control or ownership of the means of production."

He said: "Americans are running

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That is West Virginia Pulp and Paper Company's reason for specifying steam-turbine-driven RCV Blowers for vacuum service on two new machines being installed at its Luke, Md. plant.

Eleven years ago, West Virginia Pulp and Paper installed its first Roots Blowers for couch service in the company's Charleston, South Carolina plant. Since then, RCV units have been installed in expansions at Charleston (shown above) and at Mechanicville, New York. They have all given dependable vacuum service.

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away from their own revolution. The Pilgrim fathers started a Communist system, with a common warehouse, each contributing according to ability and taking according to need. The producers were few and the system didn't work. So instead, the Pilgrims adopted the free enterprise system, in which each person received fruits of his own labor."

Dr. Read asserted that taxes and handouts were governmental measures of controlling people and their productive initiative and creativeness, adding that "when it cannot tax more directly, it reverts to the crudest tax of all—*inflation*."

Dr. Ernst Mahler, a founder of the Institute and director of Kimberly-Clark, arranged for the address by Dr. Read and introduced him.

Three new records set at the Institute were revealed by Dr. Strange: Largest student enrollment ever (75); most master's degrees this June (21); most doctoral candidates (36) last winter (30 now).

He also said The Institute is balancing its budget this year at \$2½ million.

Dr. Strange said more emphasis will be placed on basic investigations and an important task at the Institute is developing "the scientific generalist" as top caliber candidates for mill positions.

At present students come from 44 colleges and universities; about two-thirds are married and have 61 children. There will be 118 participants from 51 mills and companies in the June Industry Seminar and there are 150 applicants for a 12 day conference this summer on plant biochemistry.

In cooperative research, 126 projects are in progress, 60 were initiated and 46 completed in the past year.

He announced that Dr. J. A. Van den Akker, head of physics, has received a Fulbright award as senior lecturer at the University of Manchester in England for the next two terms. Dean J. Edward Todd of admissions since 1942, is retiring this year, said Dr. Strange, and he is succeeded by Arild J. Miller, from Carleton College, Minnesota.

A shortage of scientists and engineers was reported by Dr. Roy P. Whitney, dean and vice president of the Institute in his annual address. This shortage will be acute in the next two or three years in chemistry and chemical engineering. Most Institute graduate students are in these fields.

In the nation about 4800 bachelor's degrees in chemistry and chemical engineering are earned. But only 20 to 30% of these qualify for graduate studies. Competition for these men and between the Institute and about 100 other graduate schools is very keen, he said. The supply has stopped climbing since 1954 and is far below the high in 1950 in chemistry. In chemical engineering, the level is dropping.

There is no predictable relation between population growth and paper consumption said Dr. A. Neil McLeod, Institute economist. Finland's growth of paper consumption, he said, has been only a little more than half as dependent on population growth as in Norway and Sweden—despite their homogeneity. No constancy is shown in the degree in which different countries depend on population growth as a factor governing increases in paper consumption.

From 1900 to 1960 in the U.S., increased use of paper per capita accounted for an average of 73% of the total increase in paper consumption, but in the last decade "paper consumption has taken a strong turn from the vigorous growth due to new use . . . toward an unhealthy dependence on population growth," stated Dr. McLeod.

He continued, "In this century almost three-quarters of our industry's growth has been the result of new use per consumer. The potency of population growth loses its luster in determining our industry's future, when viewed in this light."

Because growth of the pulp and paper industry has been largely due to new use, Dr. McLeod suggested the "new use" area will be the battle-ground of the future in relation to competitors with substitutes for paper.

Foreign students present a challenge and stimulation at The Institute, said Dean George D. Jernegan. Ten foreign students, he said, have received doctor's or master's degrees, or both, at The Institute. A panel of six foreign students told of the many benefits they gained at The Institute. They represented India, Austria, Taiwan, Japan, Sweden and Colombia.

An outline of research activities was led off by Dr. T. A. Howells. Dr. Harry Wilder, Dr. B. L. Browning and John Swanson, took part. They revealed steady growth in this work. Another panel pointed to interdependence in sciences and potentials of

New dean of admissions . . . Danish-born; from Carleton College—DR. MILLER



Moderator—panel on future of life and natural sciences — DR. JONES



Moderator—panel on Institute research contributions to industry — DR. HOWELLS



Introduced foreign students — "a challenge and stimulation . . ." — DEAN JERNEGAN

molecular biology in the life sciences. Dr. Edward J. Jones, Dr. Dale Williams and Dr. E. O. Dillingham, took part.

Industry executives also heard a student panel describing their thesis work. The young men were David McMaster from Tennessee, Robert Jones from Maine, Tom Myers from West Virginia and Jack Hillend from Oregon.

Institute Adds Members But Loses Them Faster by Mergers

The Institute of Paper Chemistry has 117 company members, making over 90% of all American paper and pulp. But even though it added five members in the past year, it "lost" more than that by mergers.

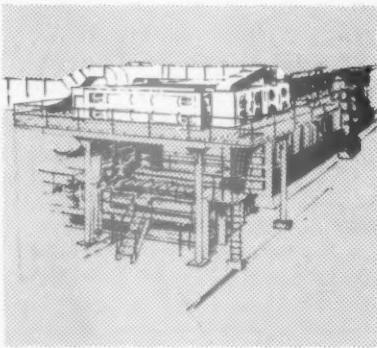
In recent years, the IPC "lost" 42 company memberships as a result of mergers.



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before reaching the customer. This machine eliminates whiteness reversion at the source—by cooling the sheet prior to its baling, thus preventing loss of whiteness due to temperature and humidity. Positioned on top of the cutter as in the accompanying sketch, it provides easier handling at the dry end.

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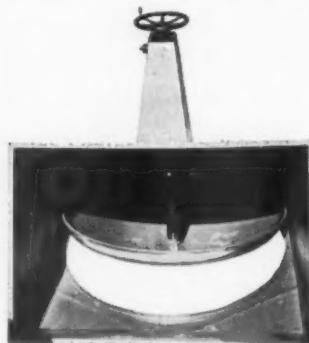
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SF Flue Dampers have been installed in numerous recovery boilers, cement plants, precipitators and similar applications. Through the simplicity of the design, the price is economical, especially in terms of the long usefulness of the valve. We will be happy to send you further infor-



mation on the SF Flue Damper and its specific uses in your plant.

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We will have details in our next Newsletter of a new, compact SF dryer—an extremely versatile device that fits over individual cylinders and features internal circulation, thus minimizing the amount of external ductwork. By means of this dryer, increased drying can be obtained and the moisture profile adjusted across the entire sheet of any machine, new or old.

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PULP & PAPER — June 12, 1961

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From S. W. Hooper: a time-and-pressure bark dehydration method

A wet sponge is not just squashed, it is squeezed. Similarly two factors — time and pressure — are needed to dehydrate bark. This is the principle of the Cowan bark press, which applies sustained and progressive pressure to turn wet bark into combustible material. An oil hydraulic system regulates a feed plunger and pressing beam operating in a chamber with three force-drainer sides.

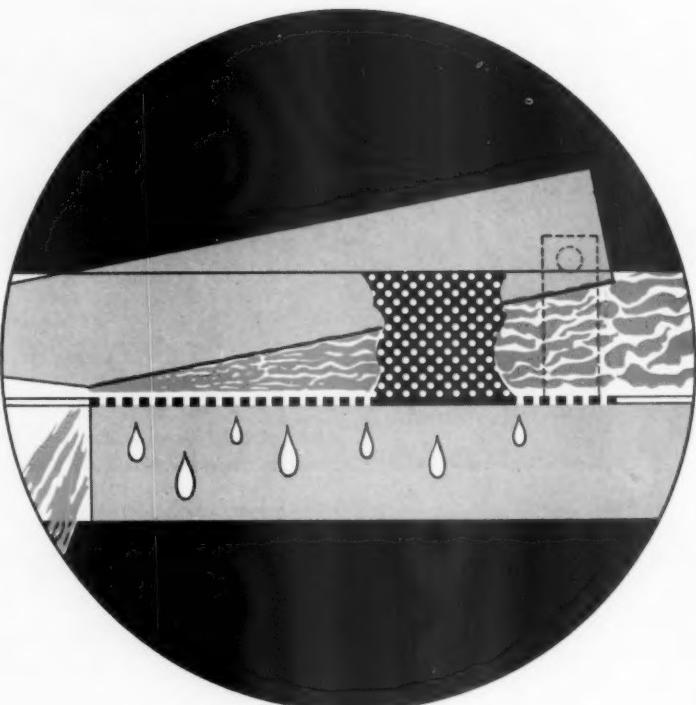
Water escapes freely because the floor and walls of this unique pressing chamber are of heavy steel plate perforated overall.

The feed-and-press cycle is completely adaptable as to speed and pressures by simple adjustments of throttle valves and limit switch settings.

Sustained pressure allows time for water to drain away. But the unit responds automatically to the rate of feed, and accepts increased loads where moisture tolerance is higher. It can withstand many times the cyclical pressure peak of 1800-2000 p.s.i., and thus will not be harmed by stones or tramp iron in the load.

The simplicity of the design has permitted an all-welded structure with few moving parts. Low initial cost, limited maintenance and considerable fuel savings mean that one or several units can be installed, giving flexibility of operation for high or low production rates.

A waste disposal problem produced the Cowan bark press



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... RESEARCH AND PRODUCTS

Research Center serves "common interest"



NEW green-painted Research Center at Beloit employs 100 scientists and others.

BELOIT, Wis.—No rival to General Clay's historic Berlin operation, this industry, nevertheless, had its own greatest "air lift" the Friday and Saturday after The Institute of Paper Chemistry's annual Executives Conference. Fourteen airplanes—eight belonging to or chartered by Beloit Iron Works and the other six owned by private paper companies—whisked 135 top industry executives and other guests from Appleton to this southern Wisconsin city to visit Beloit's new \$2,500,000 Research Center at a special "open house."

Some of the planes made more than one trip, and on Saturday most of them were in service again, transporting guests home or to main commercial air line centers.

Painted in Beloit green the huge new Research Center dominates a large open area about three miles south of the main Beloit paper machinery plant. "Far enough away," one Beloit exec. said, "so our researchers can work in freedom from the plant routine and problems."

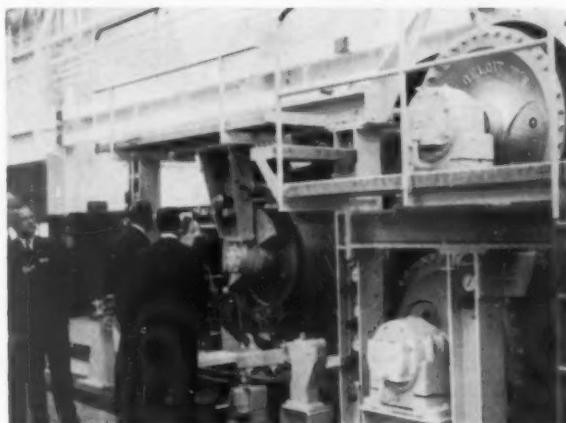
The ultra-modern Research Center

houses an amazing quantity of pilot plant and experimental equipment already, on two separate floors. All the conveniences to make a researcher's life both pleasant and stimulating are there. And he probably has more to work with than has ever been available under one roof for papermaking scientists.

There is an experimental Fourdrinier machine, 18 inches wide, which runs up to 3,000 fpm. There also will be a cylinder machine.

About one-half of the total area of 40,000 sq. ft. is being devoted to fluid mechanics—which indicates the principal scientific barriers which must be broken for faster and better papermaking. Controlled sheet forming is going to be a major scientific enterprise. Guests—who included presidents or top men from the East, Midwest, South and Pacific Coast—saw high speed photo equipment picturing sheet formations at 8,000 exposures per second.

Harry Moore, president of Beloit Iron Works, pointed out that the Research Center, as big as it is now, has ceilings and walls constructed so



DOUBLE-WET coating of 18-in. sheet—trailing blade followed by air knife—attracts biggest crowd.

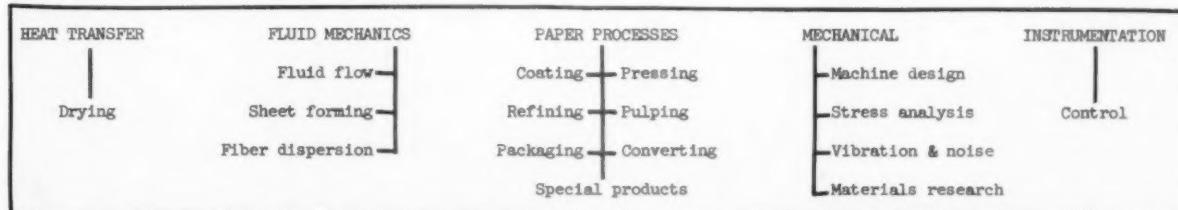


"Research is our salvation . . ." HARRY MOORE



Justus Macklem Brezinski

ORGANIZATION for Beloit Iron Works' new Research Center.



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... RESEARCH AND PRODUCTS



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that it can be expanded upward and outward.

"Our salvation in this industry is research," declared Mr. Moore. "We all can do more research, and in order to compete with other products, the paper industry must do more. It is in the common interest of all of us in paper to do more research."

Three elements necessary for successful research, Mr. Moore said, are: 1. talent or brains 2. money 3. a proper atmosphere.

An experimental coating machine was the principal magnet in the new center. There were plenty of guides available from Beloit's staff and guests roamed at will, spending as much time as they wished at any piece of apparatus. The result: There were more persons crowded around the coating machine than anything else. Sometimes it seemed like half the crowd was there all during the open house.

The coating unit has a trailing blade-air knife arrangement which double wet coats an 18 inch wide sheet without intermediate drying. It coats anything from 19 lb. bread wrap to 30 point board. Speed is limited by coating weight. Papers may be coated up to 3,000 ft. per minute.

For board, the trailing blade is used for high solids (60%) and the following air knife for low solids (45%). Visitors were treated to a view of a 20,000 ft. per second high velocity dryer on the coater. It is gas-fired, heating to 600° F.

Paper industry executives were figuratively "set back on their heels" with surprise when a young Beloit Presbyterian minister, Rev. Anderson D. Clark, came up in his invocation with what some of them called "the best definition of research we ever heard!" Said Mr. Clark:

"Research is a public admission that your company has not arrived. Research is an institution's protest against itself. Research is a saving wound



Russell Savage, retired v.p., Mead; Harry J. Buncke, retired v.p., Oxford, and Alex Stone, retired International Paper executive.



M. C. McDonald, pres., Great Northern Paper; Pete Heuer, v.p. mfg., Great Northern; Art Laage, v.p.—personnel, Beloit.



Dr. Ward Harrison, president, Allied Paper; Gunnar Nicholson, president, Tennessee P&P; Ted Sutherland, sec.-treas. & director, purchases, Thilmany P&P.

without which a company would die. Research can be its best friend."

Corporate self-improvement was the way in which Beloit's vice president in charge of research, E. J. Justus, described the Beloit objectives. He said much of the research work would be in applied research. Knowledge will be transferred to the industry via salesmen and engineers.

"We know the things we develop will be put into use at a stunning speed, sometimes," he said. "Therefore, we must be sure."

E. H. Neese, chairman of the board of Beloit, and his wife, a successful artist in her own right whose paintings of paper machinery are well known in the industry (she paints many other things, too); their son, E. H. Neese, Jr., president of Beloit Eastern; Elmer Macklem and J. E. Goodwillie, senior vice presidents, and other top officials of Beloit divisions, were on hand to greet the visitors.

Dr. J. P. (Jerry) Brezinski, director of paper processes research, described the equipment and plant programs.

Mr. Justus introduced these research leaders: Dr. R. A. Daane, heat transfer and mechanics; Dr. Joe D.



Roy Nilson, v.p. mfg., Northwest Paper; Harry Kendall, president, Northwest Paper; Don Simonds, v.p. and gen. mgr., integrated products projects, Beloit.



J. E. Goodwillie, Beloit, v.p.; Walter Goetsch, v.p., Samuel M. Langston Co.; Bruce Martin, v.p., mfg., Hudson P&P.

Parker, fluid mechanics and sheet forming; C. B. (Bernie) Dahl, noise reduction, metallurgy; C. W. Walker, research physicist; Ralph P. Mahoney, coating specialist; Dr. James E. Macklem, pulping; and Mel Gould, supervisor of the experimental area.

One hundred persons are employed in the research center. The company employs 3,000 persons in the main plant, so the research staff ratio is one to 30.

A 75,000-ft.-square welding and fabricating plant is a new Beloit addition nearby the Research Center. ■



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... RESEARCH AND PRODUCTS

Consolidated closes experimental plant

WISCONSIN RAPIDS, Wis.—Consolidated Water Power & Paper Co. announced it has shut down its experimental spent sulfite liquor recovery plant here after a commercial scale test run which lasted for three years and cost something more than a million dollars.

An engineering and cost analysis of figures thus far obtained from the experiment will determine whether the shutdown is permanent or temporary. Said Stanton H. Mead, company president: "It is important not only to industry but to the interests of conservation that the processes that are adopted by industry to improve Wisconsin's streams also prove economi-

cally supportable as well as effective."

During the shutdown, spent liquor sulfite liquor from the Wisconsin Rapids pulp mill will be disposed of through a soil filtration lagoon. Consolidated, meanwhile, will continue uninterrupted service of the Appleton utilization plant that since 1953 has evaporated spent liquor from the company's pulp mill on the Fox River for conversion into lignin liquor products or for burning industrial fuel.

The experimental recovery plant was built by Consolidated at an investment of \$750,000. It tested operating efficiency and actual costs of a new Western Precipitation process for recovering and re-using chemicals and

heat from sulfite liquor. Its aim was to prevent discharge of this pulping by-product into the Wisconsin River. After completing three years of scheduled operation, adequate experience and technical data were accumulated for full analysis of this process.

In the next several months Consolidated expects to reach a sound decision on the recovery plant's proper place in the company's future stream improvement program. "To continue operation during this period of study would yield little information of further value and require replacement of most equipment designed for the 3-year experimental program," said Mr. Mead.

Research center underway; new conifer-alder info

CORVALLIS, ORE.—Construction has begun on what is envisaged as possibly the nation's leading forest research center. This is the first unit of a \$1.5 million forest insect and disease laboratory to be built at Ore. State U. here. When completed, this federally operated unit will augment other forest research facilities on the campus. These include the agricultural experiment station's forest research div. and the OSU-operated forest re-

search center which officially becomes part of the experiment station this summer and will then be known as Ore. Forest Laboratory.

Red alder growth studies covering a 30 yr. period, have developed some growth management information about this previously ignored species. A report on the findings has been written as a m.s. thesis by Carl M. Bernsten, of Oregon State

Univ., and published by Pacific Northwest Forest & Range Experiment Station, Portland, Ore. This research (#38) indicates: A thinned 31-yr. stand of pure alder yields about 13% less volume than an unthinned pure alder stand does. At 29 yrs. a slow-starting pure conifer stand has volume equal to a 32-yr. unthinned pure alder stand—which has surpassed in yield thinned pure alder and unthinned alder-conifer stands.

... INDUSTRY GROWTH

Celgar Pulp Mill Completion

Brings sustaining industry to interior British Columbia

CASTLEGAR, B.C.—Columbia Cellulose Co. makes industrial history again. It did so in 1950-51 by building a dissolving pulp plant at Prince Rupert and introducing high alpha pulp production into W. Canada. Wood supply for that mill was backed by the province's original forest managing license, since renamed Tree Farm License No. 1.

Now, ten years later, Columbia Cellulose pioneers other aspects of the industry. This time it is through its subsidiary, Celgar Ltd., which built, and is now operating, a modern new 175,000 tpy bleached kraft mill here at Castlegar. Of the several pulp mills

in B.C. this is the only one not on tidewater. The Celgar plantsite occupies a leveled area on the mountainous

right bank of the Columbia River some 1200 ft. above sea level.

A newcomer to the pulp industry,

Top Executives at Columbia Cellulose



T. N. BEAUPRE
President



A. E. PENNEY
Exec. Vice Pres.



L. S. MCGILL
Adminis. Dir.



J. M. JOOPP
Dir. of Engr.



LOOK- ALIKES...



but only
SIMONDS Chipper Knives
come with the

"MILLION DOLLAR" SERVICE

It's a well-known fact! Many thousands of dollars have been saved by mills with Simonds Chipper Knives and Simonds Technical Chipper Service.

Increases in yield of clean-cut, unbruised chips have ranged from 1 to 2% all the way up to a startling 30%. Savings in wood costs run into the hundreds of thousands of dollars every year.

Sound unbelievable? Why not find out for yourself?

"The Man From Simonds" knows how to squeeze out the most from any chipper operation. And Simonds Knives have the extra toughness and edge-holding quality to maintain the savings. What's more, Simonds is "right around the corner" and can give you fast, dependable delivery!

Learn the full money-saving facts. Write for details today.

Buy through your local Simonds Distributor for

LET'S LOOK AT THE RECORD:

"Simonds Chipper Service increased our chip yield 8%", says one Southeast Mill.

"Simonds recommended changes increased our acceptable chips by 30%", says a New England Mill.

"Savings of over \$50,000.00 a year were the result of Simonds technical help", says another well-known company.



SIMONDS
SAW AND STEEL CO.

FITCHBURG, MASSACHUSETTS

For Local Stocks—Local Speed—Local Skill

Factory Branches in Union, N. J., Chicago, Shreveport, La., Los Angeles, San Francisco, Portland, Ore. • Canadian Factory in Granby, Que. • Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.; Heller Tool Co., Newcomerstown, Ohio; Simonds Abrasive Co., Philadelphia, Pa. and Arvida, Que., Can.

... INDUSTRY GROWTH



NEW HIGH-BLEACH kraft mill by Celgar Ltd. will produce 500 tpd, is at Castlegar, B.C., beside Columbia River. Integrated pulp-lumber-logging facilities are \$50 million investment for Canadian firm.



OPERATIONS TEAM is shown during course of mill construction. From left: Asa Craig, steam and recovery supt., R. A. Robinson, operating supt., Walter Johnson, pulping supt., Gwyn Rees, shift supt. (Other shift supts., J. L. Mulyk, J. P. Garmley.)

Celgar maintained lumber interests in southeastern B.C. since 1952. Through this experience, supplemented by years of intensive study, it gained knowledge of pulp-making potentials in the upper Columbia River basin. The resultant findings were "most promising as to pulp quality and production costs." Thus determination was acquired to build a kraft mill for utilizing wood from the region's huge tributary forest area.

In 1955 the B.C. government granted Tree Farm License No. 23 to Celgar, providing cutting rights in perpetuity on 86,000 acres of productive timberland. The license area starts a short distance from the pulp mill and extends on up the Columbia 200 miles. For utilizing the timber

crops the company has two existing sawmills, one on left bank at Castlegar and the other at Nakusp, the newly completed pulp mill and a modern integrated sawmill adjacent to the pulp plantsite will be in production by mid-June.

Celgar mill has rated capacity for producing 500 tpd bleached pulp. Top production reported so far for a single day was 540 tons. Even though the plant qualifies as a "conventional kraft mill," it embraces unique production features and, according to management, is producing pulps with characteristics not previously made in B.C.

Celgar kraft is reported to have bursting strengths approaching those of typical northern krafts, tearing re-

sistance approximating West Coast krafts, and beating time superior to both. The company feels "these features together with good printability indicate Celgar kraft is already among the best bleached kraft pulps in N. America."

Fiber characteristics of wood species grown in these interior forests reportedly resemble those of northern spruce and balsam fir. To this, and the use of what the company considers "the best available processing equipment," the resultant pulp quality is largely credited.

Columbia Pulp Sales Ltd., subsidiary of Columbia Cellulose, handles sales and distribution of kraft pulps at Castlegar as well as sulfite pulps made at Prince Rupert.

CZ studies manufacturing operations in NYC

NEW YORK—Papermakers here are doing considerable speculating about the possibility that Crown Zellerbach Corp. may begin manufacturing operations in the metropolitan area. CZ was successful bidder at a public auction on a 69-acre tract on the banks of the Arthur Kill in Tottenville, Staten Island. Says Crown, "We will make an economic study of the site to determine its future potentials for manufac-

turing operations."

Staten Island, situated in New York harbor, will be connected to Brooklyn upon completion of the new Verrazano Bridge. It will link the island with main transport arteries out of the metropolitan area.

Crown Z is going to consider all types of paper or paperboard conversion or other manufacturing facilities. Officials say the company is not buy-

ing the site for land speculation. But what the product will be is still to be decided.

Basing a new manufacturing venture not only in the heart of metropolitan New York but also in a key spot in the great "Eastern Strip City," which extends from Portland, Maine, to Washington, D.C., would put Crown Zellerbach in a very favorable transportation-cost position.

Projected pulp mill gets municipal water

HUMBOLDT BAY, CALIF.—Prospective builders of pulp mills here won't have to install water filter systems since the board of directors of the Humboldt Bay Municipal Water District, Eureka, has voted to furnish filtered water at a

slight increase in price over raw water.

At the present time, Georgia-Pacific and Simpson Timber have plans for mills on the Bay and have contracted for water to be delivered on or before

July 1, 1962, from the Mad River dam. The dam, now under construction, will provide 75 million gallons of water per day—50 million gallons of which have been contracted for.

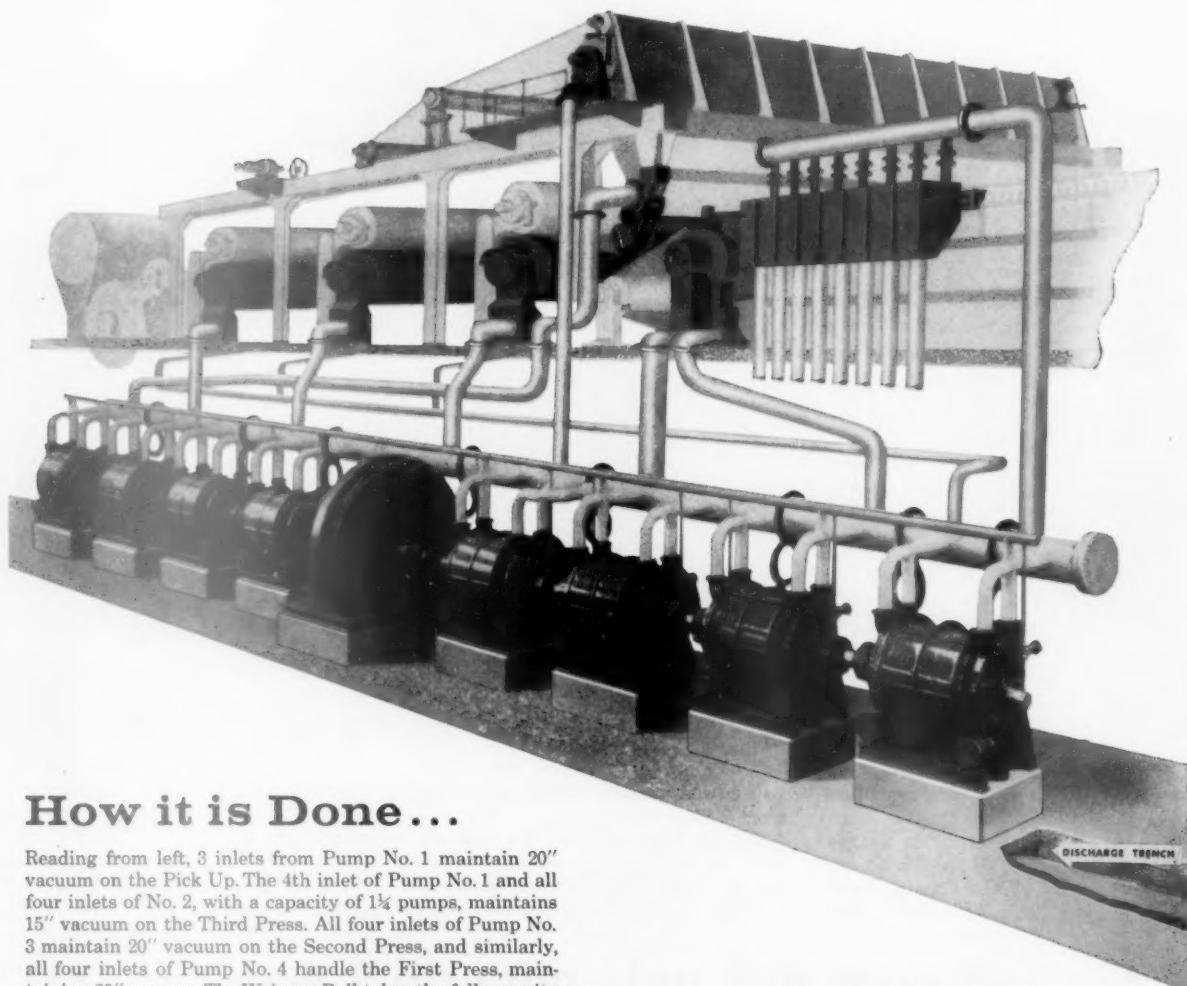
An additional 25 million gallons per

NOW-

Nash Vacuum Pumps of one size, driven if desired, by a single motor, will handle all of the varied vacuum and capacity requirements of an entire Paper Machine.

Designed by Nash especially for Paper Mill service, the new 5308 vacuum pump has four separate suction inlets, each of which functions independently of the others. This offers the machine operator great flexibility, since these may be used in any desired combination to produce the variety of capac-

ities and vacuums required by the various functions of a paper machine. These may be varied at will. Great simplicity of operation, and economy of maintenance results. The enclosed discharge trench makes possible a comparatively silent installation and permits easy and economical water recovery.

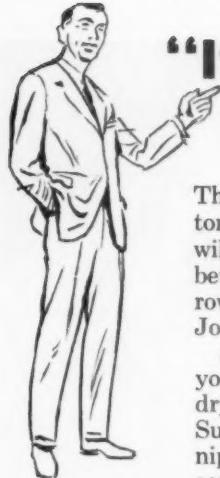


How it is Done...

Reading from left, 3 inlets from Pump No. 1 maintain 20" vacuum on the Pick Up. The 4th inlet of Pump No. 1 and all four inlets of No. 2, with a capacity of 1½ pumps, maintains 15" vacuum on the Third Press. All four inlets of Pump No. 3 maintain 20" vacuum on the Second Press, and similarly, all four inlets of Pump No. 4 handle the First Press, maintaining 20" vacuum. The Wringer Roll takes the full capacity of Pump No. 5, requiring 10" vacuum. The High Vacuum Couch Box takes a pump and a half, 4 inlets of Pump No. 6, and two inlets of Pump No. 7, maintaining 20" vacuum. The remaining two inlets of Pump No. 7 maintain 10" vacuum on the Low Vacuum Couch Box. Only one inlet of Pump No. 8 is required to handle the Felt Conditioners at 10" and the remaining three inlets of Pump No. 8 handily maintain 10" vacuum on the Wire Boxes.

**NASH
ENGINEERING COMPANY
South Norwalk, Connecticut**

New Paper Machine? Here's a tip from the field:



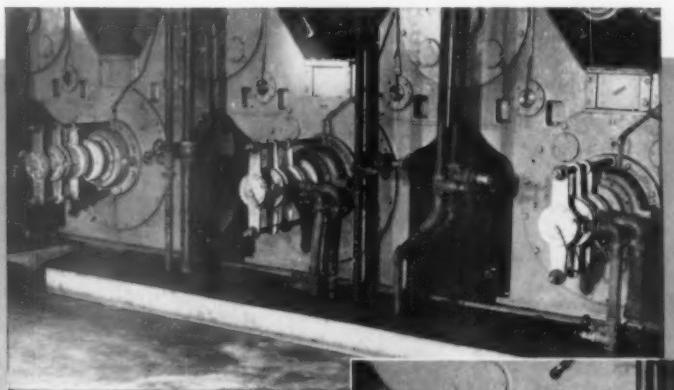
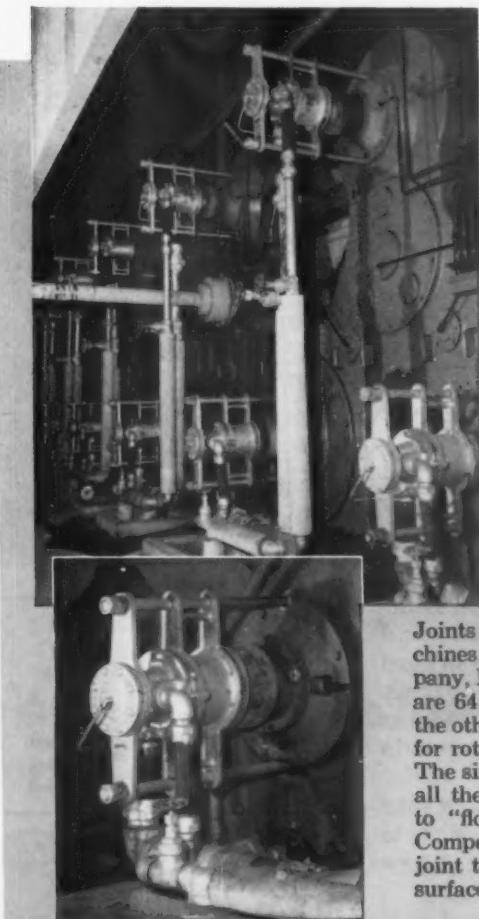
Those aren't our words; one of our customer-friends said it. But this much we will say: Any new paper machine will be better able to meet today's—and tomorrow's—demands if it is equipped with Johnson Rotary Pressure Joints.

Johnson engineering has gone far beyond the simple task of getting steam into dryer rolls. Developments like the new Super construction, the "Quick Release" nipple and the Automatic Load Compensator have blazed a trail toward higher

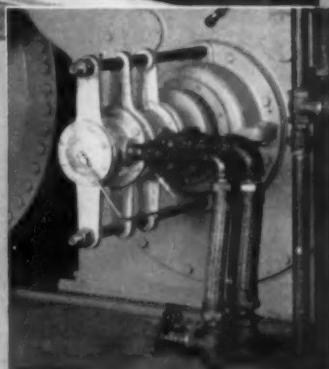
operating speeds and pressures. Research with the new Johnson Rotary Syphon places us now on the threshold of a major breakthrough in roll drainage.

Johnson Joints are available for all paper machines—rotating or stationary syphon pipes, open or enclosed gearing. All machinery manufacturers can supply them. We'll supply a pair for 90-day trial in your own mill, so you can get all the facts first hand.

'Write for information on Johnson Joints—most advanced and most complete line of its kind'



*These two
are really NEW*



Pictures show Johnson Joints on two outstanding paper machines built by Black-Clawson Company, Paper Machine Division. There are 64 Johnson Joints on one, 69 on the other. These are Type L-N Joints, for rotating syphon pipe application. The simple method of mounting employs support rods which carry all the weight of joint and piping, permit the rotating assembly to "float" freely inside. Installations include Automatic Load Compensators, a device which utilizes pressure from within the joint to create a never-varying unloading pressure at the sealing surface, thus cutting power demand and wear to a minimum.



THE JOHNSON CORPORATION

819 Wood Street, Three Rivers, Michigan

Rotary Pressure Joints • Direct Operated Solenoid Valves

What's News in Rubber...

NOW... BUTYL RUBBER IN LATEX FORM



Now you can get Butyl Rubber in convenient latex form — an easy-to-handle emulsion that has all the outstanding properties of Butyl!

Enjay Butyl can now be utilized in tire cord dipping, paper coating and saturating, textile treating and proofing, roof coating, adhesive compounding, emulsion paint formulations, and leather finishing.

Enjay Butyl Latex is shipped

FOB Baton Rouge, La. in phenolic-lined, insulated 8,000 and 10,000-gallon tank cars, or in lined 55-gallon open-head steel drums. Drum stocks will be warehoused at other strategic shipping points in accordance with demand.

For more information and your copy of our Latex manual, write to Enjay at 15 West 51st Street, New York 19, New York.

TYPICAL INSPECTION DATA

Total Solids, wt %	55
Specific Gravity, 70°F	0.96
pH	5.0
Viscosity, cps	560
Mechanical Stability	Excellent
Freeze-Thaw Stability	Excellent
Chemical Stability	Excellent

EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

ENJAY CHEMICAL COMPANY

A DIVISION OF HUMBLE OIL & REFINING COMPANY



... INDUSTRY GROWTH

day is thus available if a larger pipe line should be installed. For this purpose, \$1,300,000 is available, thus enabling a third 300 ton pulp mill to be built and operated. Estimates of the pulp potential in the Humboldt area

are between 1200-1900 tons per day. Planned capacity of the two mills now projected is 300 tons each.

Major pulp producers are being informed of pulp manufacturing facilities in Humboldt County, through a

comprehensive report by F. C. Riley, which is available free from the Humboldt County Board of Trade or the Eureka Chamber of Commerce, Broadway and Hawthorne Sts., Eureka, Calif. ■

Depressed area seeks pulp mill as panacea

ST. PAUL—A depressed area in northern Minnesota has turned to the pulp and paper industry for possible economic salvation. A local community development organization in Ely, Minn., in the heart of the Minnesota iron range, has retained Grover Dimond Associates, Inc., of St. Paul, to conduct a survey on the feasibility of constructing a pulp mill at Ely.

Prime source of raw material would be Superior National Forest, which has a large supply of pulpwood and sawtimber available for harvest. According to preliminary reports from Dimond Assoc., the timber supply could support more industry and provide more employment if it were more fully utilized.

This source, combined with pulpwood available on private lands and other public-owned lands gives a continuous supply that will readily support a pulp mill. At present, northeastern Minnesota ships a very limited quantity of pulpwood to pulp mills in the Lake States region.

The Minnesota iron range, including Ely, has been classified as a distressed area under the recently passed "Area Redevelopment Act" and is eligible for government assistance in the establishment of new industry. The economy in this area has been de-



STUDYING FEASIBILITY of pulp mill in Minnesota iron range depressed area are top men from Grover Dimond Assoc., L. W. Anderson, D. L. Chapman, proj. mgr., and G. W. Dimond, head of the engineering firm conducting survey.

pendent for years on high grade iron ores but the supply has been diminishing. Timber, in contrast, has not been fully utilized. Dimond Assoc. reports

that by practicing good forestry management principles, the timber supply can be used to stabilize the economy of the area indefinitely. ■

.... INTERNATIONAL

Mainland China seeks Canadian pulp

VANCOUVER, B. C.—Communist China is reported to be interested again in buying pulp from Canada, but the feelers aren't being regarded seriously by producers, notwithstanding the fact that another segment of the Canadian economy—the grain trade—recently sold \$60,000,000 worth of wheat to the Peking government for cash.

"We're selling pulp right now in the Far East," said J. V. Clyne, chairman of the board, MacMillan, Bloedel & Powell River, Ltd., Vancouver. "We

have our agents in Hong Kong and where the pulp eventually is consumed we don't know."

A couple of years ago, before the merger with Powell River Co., MacMillan & Bloedel made one shipment of kraft pulp to Communist China. Rayonier Canada, Ltd. was offered a considerable volume of business from China, but the deal never materialized.

Canadian Forest Products, whose Howe Sound division manufactures

kraft pulp, scouted the China market some time ago, with negative results. "We'd sell for cash, but not for peanuts," said L. L. G. Bentley, vice president. "We have pulp for sale, but the payments problem is a sticky one."

C. M. Forsythe-Smith, Canadian government trade commissioner, Hong Kong, is visiting China next month. He has been asked to take samples of Canadian pulp, but it's considered doubtful if any trading will result. Pulp has a low priority in China. ■

"Reliance V★S Drives give precise results on this extruder-laminator for Scott Paper Company."



H. J. Bates, Manager
Rubber & Plastics Section
Reliance Electric & Engineering Co.

"Uniform coating at 1000 FPM is a vital part of the big story here! This Egan Extruder-Laminator, applying polyethylene to a paper base, is fully automatic and precisely speed regulated to plus or minus $\frac{1}{2}\%$ with a Reliance VSR speed regulator and powered by a Reliance V★S Drive.

"Each core on the unwind turret has its own motor, controlled by a VSR tension regulator; the same is true on the rewind. Paper splice and transfer are accomplished automatically at high speed, and rolls maintain proper tension during roll diameter changes. The laminator, lead section, is motor-driven, as well as the pull roll preceding the rewind. Each unit is speed balanced and matched according to the operation of the laminator to assure uniform coating.

"Extruder is driven by a separate V★S Drive. In order to cover the widest possible range of coating, its speed is independently set with respect to the laminator."

Reliance Sales Engineers are ready to work with you on any application problem . . . and can help you arrive at a practical, economical solution. Call your nearest Reliance office . . . or if you prefer, write for Bulletin D-2506.

L-1645

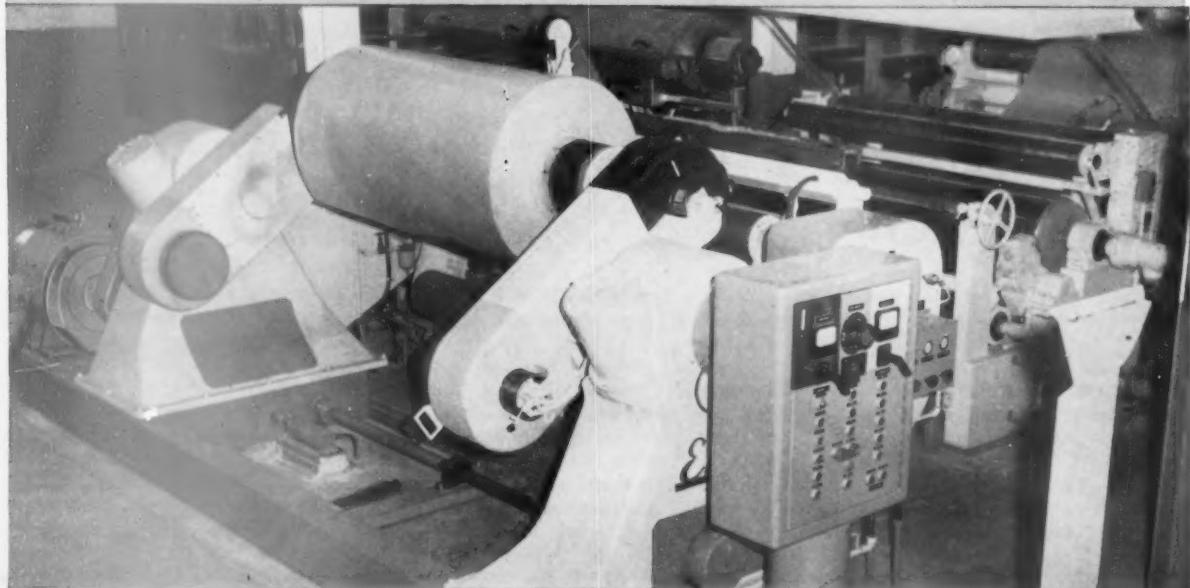
Product of the combined resources of Reliance Electric and Engineering Company and its Master and Reeves Divisions

RELIANCE ELECTRIC AND ENGINEERING CO.

DEPT. 18-6 CLEVELAND 17, OHIO
Canadian Division: Toronto, Ontario
Sales Offices and Distributors in Principal Cities



Duty Master A-c. Motors, Master Gearmotors, Reeves Drives, V★S Drives, Super 'T' D-c. Motors, Generators, Controls and Engineered Drive Systems.



Weyerhaeuser names three executive v.p.'s

TACOMA, WASH.—Leaders of three main functional sections have been named to executive vice president posts by Weyerhaeuser Co.

Howard W. Morgan, major operating executive of pulp-paperboard-container group, is responsible for domestic and foreign manufacture and sales of products amounting to about 50% of company business. He was associated with Oxford Paper Co., 1928-32, New York State College of Forestry, 1932-34, Institute of Paper Chemistry, 1934-38. He joined Munising Paper Co. as technical director in 1938 and became vice president five years later.

Mr. Morgan joined Weyerhaeuser in 1946 as pulp division manager, became a vice president in 1953 and a director in 1960.

George H. Weyerhaeuser is responsible for operations of wood products and timber group, which represent also 50% of the company's business.



MORGAN



WEYERHAEUSER



NOLAN

He joined the company after graduation in 1949. Subsequent to serving in pulp and lumber divisions at the mill level, he joined the Tacoma office in 1957 as asst. to the executive vice pres., was named manager of wood products and timberland group and a vice president in 1958, and elected a director in 1960.

J. E. Nolan was with the Chicago

law firm of Bell, Boyd, Marshall and Lloyd for 16 years before he joined Weyerhaeuser as general counsel in 1948. He was elected vice president in 1952. In his new capacity as major staff and administration executive, he directs and coordinates activities of law, personnel, public affairs, secretary and controller, treasurer, general traffic and economist departments. ■

Norman elevated to executive v.p. for Crossett

CROSSETT, ARK.—Greater responsibility is being assigned in the projected growth of The Crossett Co. to William C. Norman, as he steps into newly created post of executive vice president and general manager.

A native of Crossett, Mr. Norman joined the company in 1938 after ten years with the Bank of Crossett, becoming vice president and general manager until his recent election.

Mr. Norman is also president of the Bank of Crossett, president of Tri-State Mill Supply Co., vice president of Public Utilities Co. of Crossett, and vice president of Triangle Bag Co., Covington, Ky.

At the same time, the board of directors also elected Robert R. Wright III, to post of assistant secretary. He continues as legal assistant.

Crossett stockholders also re-elected the following directors: R. W. Austin, Boston, Mass.; R. D. Bayly, Laguna Beach, Calif.; K. O. Elderkin, Athens, Tenn.; E. C. Gates, Fordyce, Ark.; H. E. Jeffress, Chicago, Ill.; B. A. Mayhew, Fordyce, Ark.; W. D. Morse, Pasadena, Calif.; Wm. C. Norman, Crossett, Ark.; J. H. Rule, Little Rock, Ark.; Mrs. Frances W. Warren, Eugene, Ore.; A. R. Watzek, Portland, Ore.; J. W. Watzek, Jr., Chicago, Ill.; and P. F. Watzek, Crossett, Ark. ■



NORMAN

Weston names three new officers

TERRE HAUTE, IND.—Three executives of the Wabash Fibre Box Co. Div. have been elected officers of The Weston Paper and Manufacturing Co.

The new officers: Robert C. Adamson, vice president, container production; Carlton J. Campbell, vice president, mill sales and Robert R. Reyher, vice president, container sales. All three officers continue to be located at Weston's executive headquarters here in Terre Haute at 2000 No. 19th St.,

in present management capacities.

Mr. Adamson, who is general production manager of Weston's Wabash Fibre Box Co. Div. and also general manager of its Terre Haute plant, has been with the company since 1941. He was named general production manager in 1960.

Mr. Campbell joined Weston 34 years ago and was general production manager of the container division prior to becoming sales manager of

the mill division in 1960.

Mr. Reyher has been with Weston since 1941. He was sales manager of the Chicago plant until he became general sales manager in 1960.

The Wabash Fibre Box Co. Div. of Weston, in addition to operating the corrugated box plants in Terre Haute, has plants in Chicago, and Fort Wayne. The mill division operates paperboard mills in Terre Haute and St. Marys' Ohio. ■

FLUIDICS* AT WORK



New plastic coating from Pfaudler resists most corrosives to 210°F.

Here's an economical way to protect your equipment from the corrosive effects of direct product contact and ambient corrosive atmospheres.

It's Pfaudlon 301,* a water suspension of Hercules Penton† developed by Pfaudler, that is sprayed on and then fused to the base metal. The resultant coating is hard, glossy, nonporous and smooth. It resists most acids, alkalies and solvents to 210°F, even higher for certain pre-evaluated conditions.

Choice of metals. It can be readily applied as an interior or exterior coating to such metals as mild steel, cast iron,

stainless steels, Hastelloys, bronze and copper.

Variety of equipment. You'll find that Pfaudlon 301 is well suited to protecting many kinds of equipment—storage tanks, open vessels, pumps and pump parts, blowers, agitators and baffles, valves, filter parts, columns and fume ducts, to name a few. And because this is a spray-type coating, the handling of complex shapes presents no problem.

Available two ways. You can put the corrosion resistance of Pfaudlon 301 to work two ways:

1. Specify it when ordering new

fabricated equipment from Pfaudler.

2. Extend the service life of existing equipment by having it custom coated. Ten firms throughout the country are licensed by us to provide this custom coating.

More facts. Bulletin 1007, *Pfaudlon 301 Plastic Coating by Pfaudler* tells all — what it is, recommended services, how applied, and who is licensed to apply it. For a copy, or answers to your questions, write to: Pfaudler Division, Dept. PP-61, Rochester 3, New York.

*Patent applied for

†Registered trademark for chlorinated polyether manufactured by Hercules Powder Company.



PFAUDLER PERMUTIT INC.

Specialists in FLUIDICS...the science of fluid processes

*FLUIDICS is the Pfaudler Permutit program that integrates knowledge, equipment and experience in solving problems involving fluids.

FINISHED PRODUCT PROCESSING EQUIPMENT Winders • Reclaim Winders • Cutters • Slitters • Sheeters • Supercalenders • Roll Wrappers • Roll Lowering Tables • Roll and Shaft Handling Equipment • Conveyors • Unwind Stands and Tru-Tension Controls • and other equipment for the paper and allied industries.

before you decide on your new **cutters/slitters**

*meet some
"Beloit Eastern"
people*

DIRECTOR OF RESEARCH Jerry Karr (left, below) and Orman Curtis, materials handling engineer, review an experimental setup of cutters and slitters before equipment goes to customer's plant. Research tryouts enable mill operators to see specified equipment actually running before it is built for production. Research group works closely with mill customers.



IMPROVEMENTS in finishing room equipment stem from research projects of Downingtown. Customers get benefit of finest technical know-how, and competitive advantages as modern as tomorrow's blueprints.

ELECTRONIC equipment is checked by Karr and Curtis for possible application to Beloit Eastern's finishing and converting product line.



PHOTOS: S. R. CHRISTENSEN



Member Beloit Group

**BELUIT
EASTERN**
CORPORATION
Downington, Pennsylvania



TITANOX®-A-CG deserves a birthday party

This newest member of the TITANOX white pigment family hasn't been around long. But it is being so widely adopted for use in paper coatings that we're celebrating its birthday party already.

TITANOX-A-CG is the coating grade anatase titanium dioxide pigment well suited to the high solids, high speed coatings applied by all modern coating methods including the trailing blade coater. This pigment is suitable to other processes such as size press and calender application.

In addition to high whiteness, brightness and opacity, TITANOX-A-CG readily yields high gloss. This pigment is ideal for the fast, continuous production of paper surfaces of uninterrupted smoothness.

We will be glad to discuss with you the type of TITANOX best suited to solve your white pigmentation problems. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments, Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY



Sonoco elects three vice presidents

HARTSVILLE, S.C.—C. W. Coker, president, Sonoco Products Co. announces these changes: Named to the board as a director to fill the unexpired term of the late J. L. Coker is C. W. Coker, Jr. Three new vice presidents elected are C. W. Coker, Jr., administration; P. C. Coggeshall, administration and R. B. White, production.

Mr. Coker, Jr., joined Sonoco in 1958 with the standards department and in 1959 was named asst. to the vice president. He's a graduate of Princeton University and received his master's from the Harvard School of Business.

Mr. Coggeshall is a graduate of the University of South Carolina (1936) and the Harvard School of Business (1938). He joined Sonoco in 1939 as



COKER



COGGESHALL



WHITE

asst. to the vice president and later became asst. purchasing agent. In 1946 he was promoted to general purchasing agent and became director of purchasing in 1953.

Mr. White joined Sonoco in 1928,

was the first supervisor of the standards department. He was promoted to supt. of the cone dept. in 1944 and supt. of the paper mill in 1946. He became production manager in 1955. He's a Clemson College graduate. ■

New Leaders in "Trees for Tomorrow, Inc."

MERRILL, Wis.—Three new officers and one new board member were elected at the recent 17th annual meeting of the industry-sponsored organization, Trees for Tomorrow, Inc., E. B. Hurst, manager timberlands, Consolidated Water Power & Paper Co., was elected president, and Norman S. Stone, president of Mosinee Paper Mills Co., was elected secretary and treasurer.

Mr. Hurst replaces Folke Becker, board chairman, Rhinelander Paper

Co., and Mr. Stone replaces Dave Smith, president of Wausau Paper Mills Co. Mr. Becker and Mr. Smith are terminating a record of service covering nearly two decades. Both were active in the founding Trees for Tomorrow in 1944.

C. L. Dostal, president, Thilmany Pulp & Paper Co., was elected second vice president. H. P. Taylor, president of Wisconsin Public Service Corp., Milwaukee, was re-elected first vice president. M. N. Taylor was named



HURST



STONE

executive director for the 18th consecutive year. ■

STRICTLY PERSONAL . . .

East

Sealright-Oswego Falls Celebrates 75 years



Ash

McHugh

McNamara

Estabrook

Tooke

This paper packaging firm, was founded on the Oswego river at Fulton, N.Y. as Oswego Falls Pulp and Paper Co. Today,

Sealright has plants in Kansas City, Kans., Los Angeles and Peterborough, Ont. At diamond anniversary luncheon were F. C.

Ash, chairman, Sealright-Oswego Falls Corp.; Keith S. McHugh, commissioner of the Dept. of Commerce, State of N.Y.; R. Reid McNamara, vice pres., Sealright-Oswego and pres., Sealright Co., Inc.; H. C. Estabrook, pres., and C. M. Tooke, exec. vice pres., Sealright-Oswego Falls Corp.

Lester J. (Lefty) Smith, manager of manufacturing, Printing Paper Division, St. Regis Paper Co., was honored as "Boss of the Year" in Watertown, N.Y., at a National Secretaries Association meeting (local area). He was crowned by his secretary of the past six years, Miss Dorothea Allen.

New officers for 1961-62 season of Northern District of Empire State Section of TAPPI are Charles Mayhood, chairman, St. Regis Paper . . . turn to p. 94

a new brochure both

informative and useful



This 64-page brochure is divided into two sections. More than $\frac{3}{4}$ of the total page area is occupied by photographic illustration . . . The first section portrays the extreme care which must be exercised in the *manufacture* of Fourdrinier wire. The second points up certain difficulties which are sometimes met in the *use* of Fourdrinier wire cloth, and suggests means of dealing with those hazards . . . a copy is available for you upon request.



WIRE WEAVING COMPANY
14001 Aspinwall Avenue • Cleveland 10, Ohio

"Quality Fourdrinier Wires Since 1904"

MEETINGS

... June

Institute of Paper Chemistry, Sixth Seminar, Appleton, Wis.—June 11-30
 TAPPI and CPPA, Statistics Course, Queens Univ., Kingston, Ont.—June 19-30
 SAPI, Eastern, Golf Outing, Hackensack Golf Club, Oradell, N. J.—June 20
 Michigan Div. PIMA and TAPPI, joint meeting, Gull Lake Country Club, Gull Lake, Mich.—June 20
 APA, Western technical committee spring meeting, Hotel Monticello, Longview, Wash.—June 20-21
 Western Michigan University Pulp and Paper meeting, Electrical Engineering, Kalamazoo, Mich.—June 21-23.
 Zellcheming, Germany's annual technical meeting, Baden-Baden, West Germany—June 27-30

... July

University of Maine Summer Institute, Orono, Me.—two sessions, July 10-August 17

... August

International Congress of Pure and Applied Chemistry, Montreal, Can.—Aug. 9-11
 TAPPI Lignin Symposium, Edgewater Beach Hotel, Chicago—Aug. 14-16
 TAPPI Testing Conference, Queen Elizabeth Hotel, Montreal—Aug. 15-18.
 PIMA New York-Canadian Div., Saranac Inn, Upper Saranac Lake, N. Y.—Aug. 31-Sept. 2

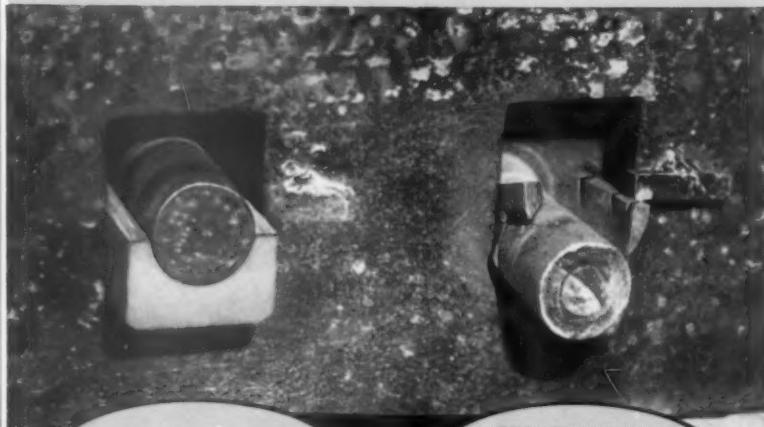
... September

TAPPI, 11th Corrugated Containers Conference, St. Francis Hotel, San Francisco, Calif.—Sept. 6-8
 CPPA, TAPPI, Fourth International Mechanical Pulp Conference, Edgewater Beach Hotel, Chicago—Sept. 19-21
 NW Div. PIMA, fall meeting, Faust Hotel, Rockford, Ill.—Sept. 20-22
 Northeastern Div., PIMA, Poland Spring House, Poland Spring, Me.—Sept. 21-23
 British Paper and Board Makers Assn., International Fiber Bonding Symposium, Oxford, England—Sept. 25-29

... October

TAPPI Deinking Conference, Hotel Harris, Kalamazoo, Mich.—Oct. 4-6
 PIMA Conn. Valley-TAPPI N.E. Section Joint Conference, Equinox House, Manchester, Vt.—Oct. 5-7
 TAPPI Annual Engineering Conference, Shoreham Hotel, Washington, D. C.—Oct. 15-19

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Chemloy Bearings in action. Weld marks at left show positions of retainers formerly needed to keep bronze bearings in position. 20,000 such weldments are eliminated in this instance.

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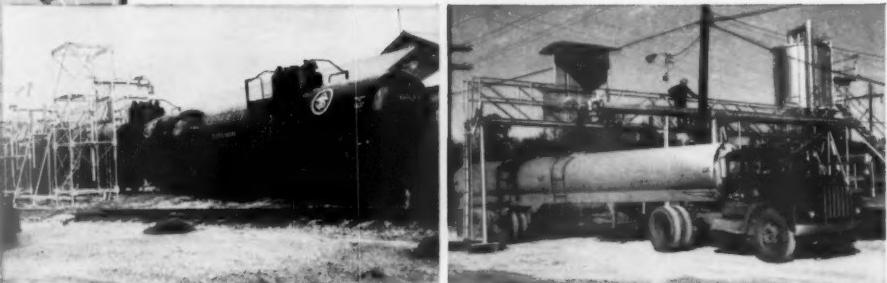
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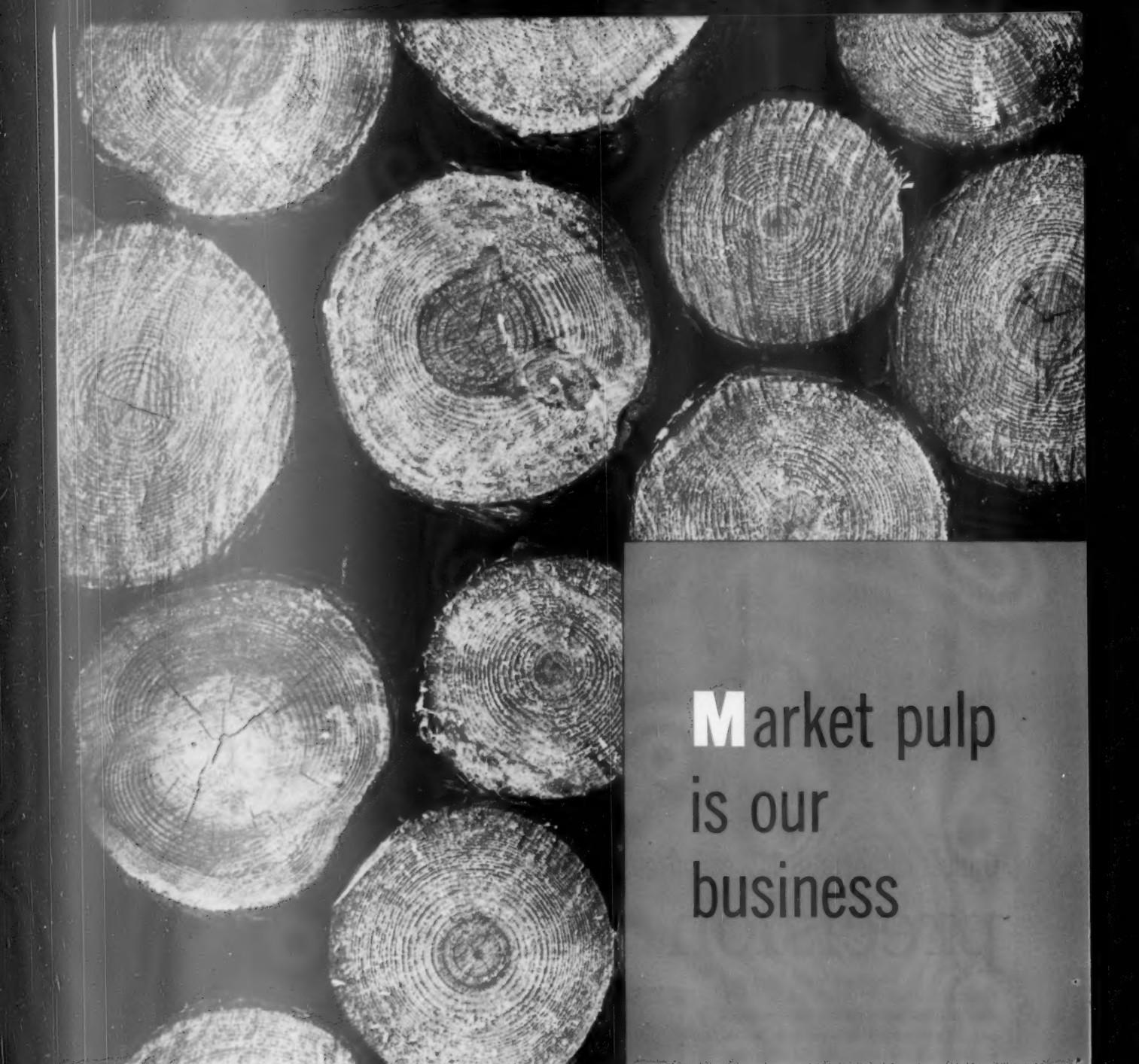
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BUCKEYE



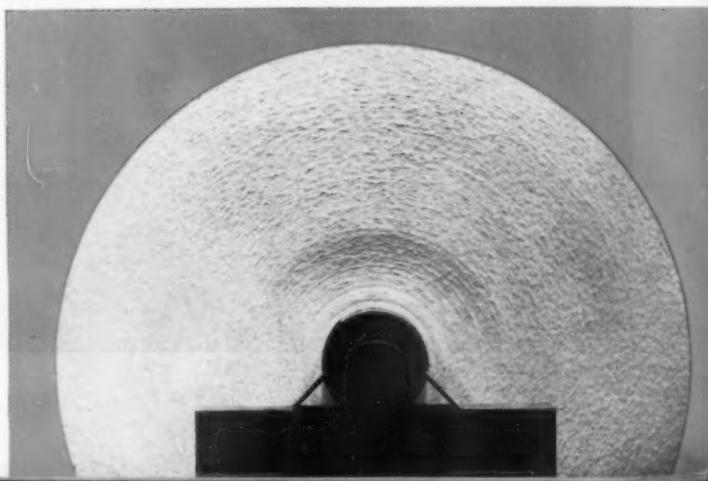
The electron microscope permits direct study of fiber surfaces and their effect on pulp characteristics.

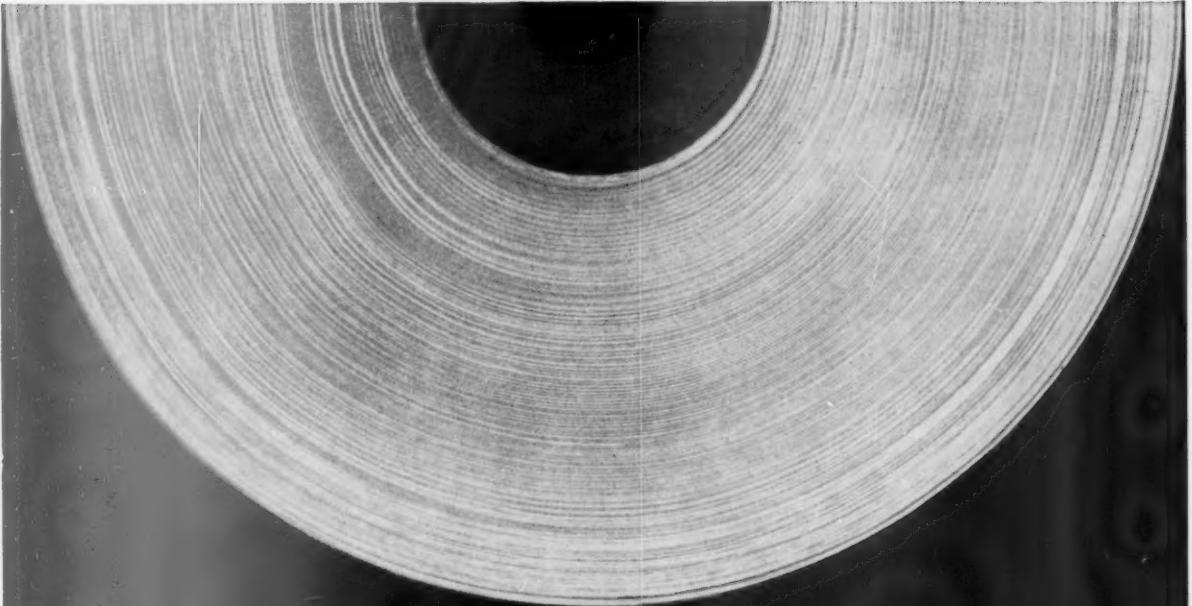
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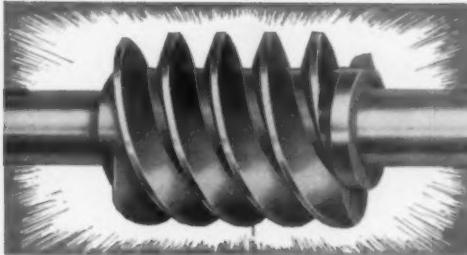
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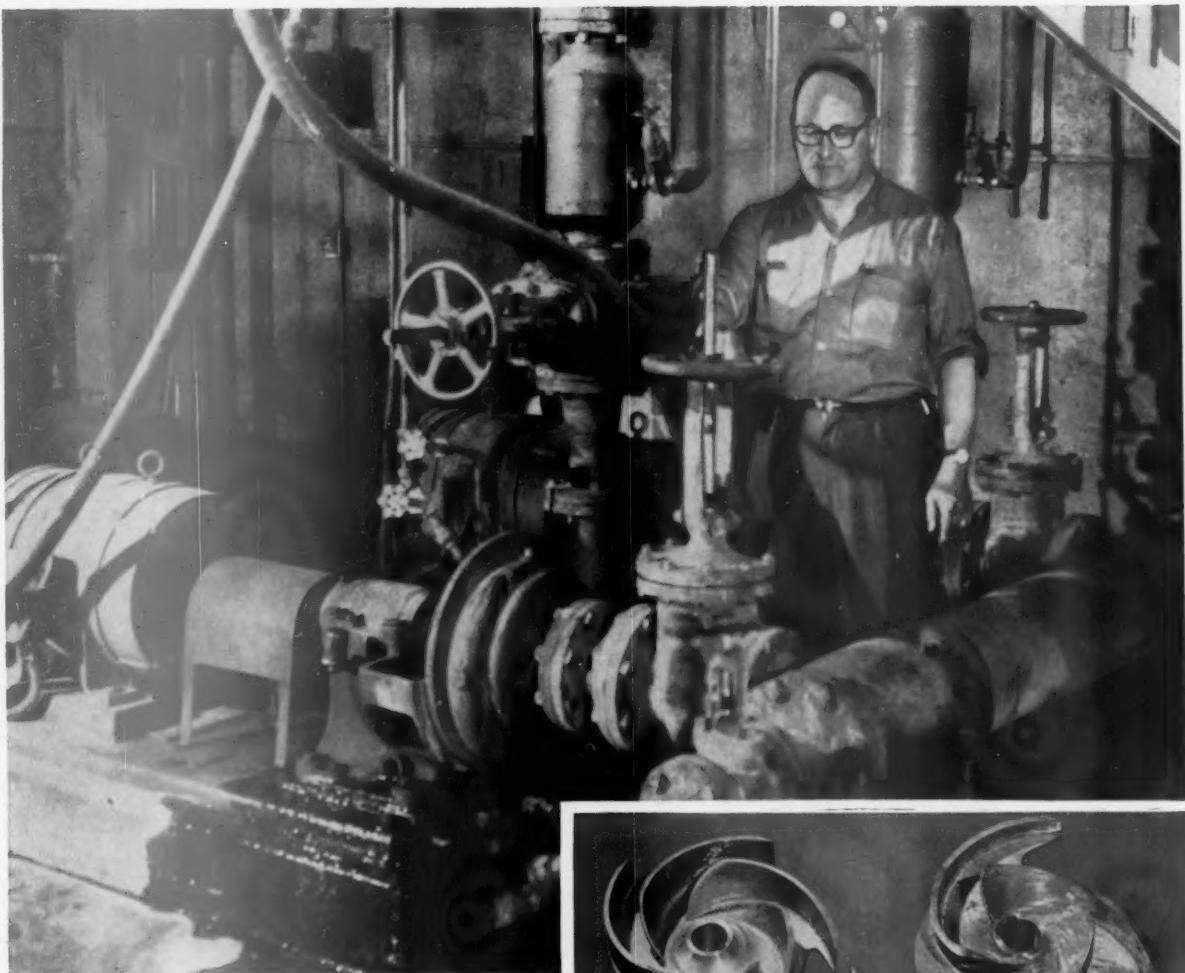
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Cast nickel stainless impellers show no corrosion, erosion or wear after 9 yrs. pulp liquor service

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"In our experience, Saran Lined Pipe provides maximum resistance to corrosive liquids, and the best dollar value in terms of original cost and maintenance costs," says Superintendent E. K. Scholz.

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When your plans call for piping systems that must be physically strong, with maximum resistance to corrosion, consider Saran Lined Pipe. Saran Lined Pipe, fittings, valves and pumps are available for systems operating from vacuum to 300 psi, from below zero to 200° F. They can be cut, fitted and modified easily in the field without special equipment. For information, write Saran Lined Pipe Company, 2415 Burdette Ave., Ferndale, Mich., Dept. 1571JJ6-12.

THE DOW CHEMICAL COMPANY



Midland, Michigan



JUNE, 1961 Published for information of paper and board mills by Samuel M. Langston Company, Camden 4, N.J. VOL. 3, NO. 3

HOW TO WIND BETTER ROLLS

Roll Density Controls Play Important Part In Determining Mechanical Quality of Roll

(Editor's Note: This is another in our series of technical articles on new developments to achieve the higher quality shipping rolls demanded by the stricter specifications of today's market.)

In these days of highly competitive markets, paper and board are more critically judged than ever before. In addition to inherent qualities in the product, such as brightness and tear strength on paper, and Mullen and caliper on board, the mechanical condition of the finished product also receives critical appraisal.

Such factors as absence of dust and lint, accuracy of slitting, straightness of sides, presence of welts, and roll density, all play a part in this determination.

The matter of roll density is what concerns us here.

The roll density desired, whether the product is paper or board, remains the same—namely, uniform density from the core to the outer periphery of the roll. To achieve uniform roll density, it is necessary to control certain elements in the winding operation. Here, however, the similarities end. The broad

classifications of these materials have characteristic differences in their inherent qualities.

Characteristics Vary

With respect to paper (generally referring to bond, offset, catalog, mimeo and coated publication grades) we are dealing with sheets varying in characteristics of finish, density and resilience.

Generally, these grades range in weights from 50 to 70 lbs. per cubic foot—which means the sheet is relatively dense with a relatively small amount of resilience, this being de-

pendent on furnish and finish, as supercalendering will produce extremes of density and inelasticity, particularly on ground wood filled sheets.

These grades then tend to develop very high roll weights. Since, in the winder, this weight is supported by two carrier drums, the weight is split into two components at the nip points. The higher this specific nip pressure becomes, the harder the roll becomes. Since the roll increases in weight as it gets larger in the winding operation, these nip pressures grow—and if this condition is uncompensated, the roll becomes increasingly hard which can result in roll damage due to "splitting". Nip pressure, therefore, becomes the first area to be controlled.

Importance of Large Drums

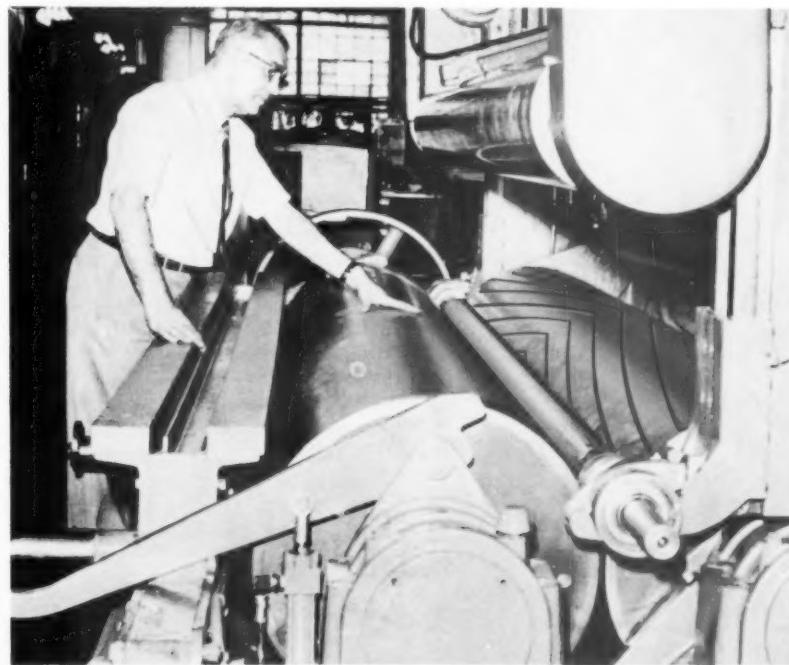
The specific nip pressure varies inversely as the diameter of the carrier drums, since basically with larger drums the weight load can be spread over a greater area. This, then, becomes the first characteristic required of a winder to do a job on these grades, namely—large diameter drums. Machines have been built with 25" diameter drums in trim widths as narrow as 112", in order to secure this favorable condition of low specific nip pressure.

Specific nip pressure is also affected by rider roll pressure. Action of the rider roll is essential at startup to ensure a firm core, but its value decreases with increasing paper roll weight. It becomes necessary therefore to compensate for this—accomplished on Langston winders by hydraulic, automatic compensation. As the rider roll goes higher with increasing roll diameter, its pressure is automatically and gradually reduced until the rider roll is exerting no downward force, thus serving to keep specific nip pressure uniform.

Further Relieving Weight

If it becomes desirable to wind increasingly larger diameter rolls, still further compensation must be made after the rider roll has ceased to exert a

(Continued on next page)



LARGER DRUMS

...spread the weight load



TOP HANDWHEEL sets desired amount of Langston Automatic Torque Control on front drum. This control automatically reduces the draw as roll of paper increases in diameter. Feature is particularly helpful on highly dense super calendered, coated publication and other such grades. Bottom handwheel sets automatic rider roll pressure, keeping nip pressure uniform as roll weight increases.

Roll Density Controls Play Important Part In Determining Quality

(Continued from preceding page)

downward force, if extreme roll hardness is to be avoided. This hardness manifests itself in "splitting" of the rolls either on the winder or in subsequent storage or transit.

Normally further weight compensation is accomplished by physically relieving the roll weight through application of an upward force on the rewind shaft. This, of course, presupposes core diameters sized to stand deflection. Modern Langston winders for application to grades of this type are equipped with automatic programmed hydraulic counterweighting of the rewind shaft.

Influence of Draw

In addition to the factor of nip pressure, but of equal importance, is the draw on the web between the carrier drums.

As the roll of paper rests on the drums, the draw applied by torque input to the second carrier drum dramatically controls the internal tension of the web. A large amount of torque input, therefore, increases the tension and consequently the hardness of the roll.

With regard to board, this is a beneficial condition, because the strength of the material is sufficient to withstand this internal tension. Common practice on board, therefore, is to use a relatively simple drive providing constant torque input to the second carrier drum while the roll is being wound. The initial torque control can be varied to suit the board, but once set, it remains relatively constant throughout the winding of that particular roll.

Methods of Thread-up

The thread-up arrangement has a most significant bearing on the effect of draw control. Two types of thread-ups are in general usage—first being thread-up over the front drum (Illustration 1), and secondly, between the drums (Illustration 2).

In Illustration 1, it can readily be seen that the first carrier drum, defined by being the drum first in contact with the paper, is the front drum. The sec-

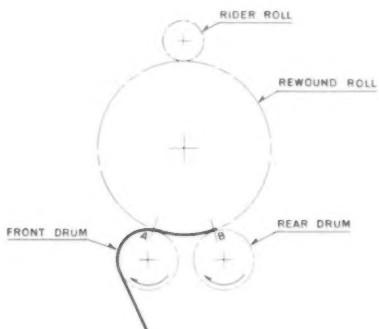


Illustration 1

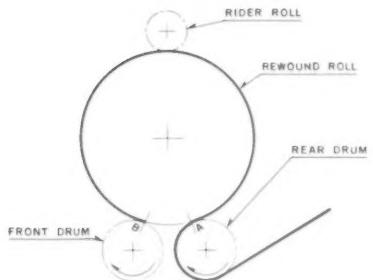


Illustration 2

ond carrier drum is the rear drum. In this case the draw is controlled by torque input to the rear drum and is effective over segment A-B—a relatively small area on the surface of the roll. From B, proceeding counter clockwise around the roll to A, the web draw is largely uncontrolled, except for a minor contribution on the part of the rider roll torque input. This is the limitation of this design—a specific limit on draw adjustment.

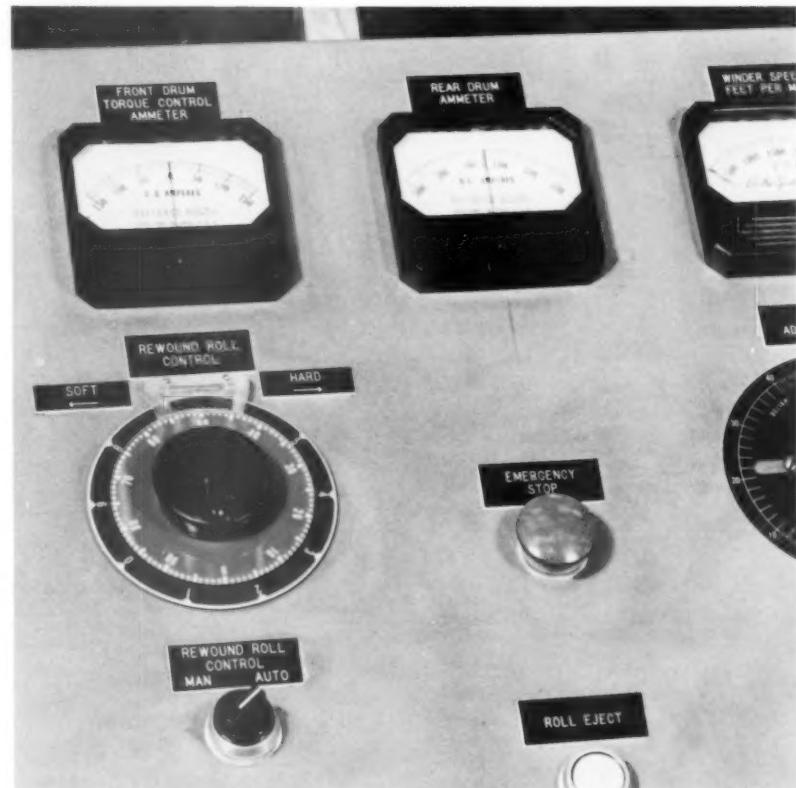
The design shown in Illustration 2 shows the rear drum as the first carrier drum (or speed control drum), and the front drum is the second (or torque control drum). The draw is applied by torque input to the front drum and affects the paper from point A counter clockwise around to B, which is a large segment of the roll periphery. In this case, dramatic density control is possible to wind either softer or harder rolls as desired.

Evaluation of Drives

Different type drives are available to suit winder designs and application.

- A single motor drive with the torque control drum geared to the speed control drum is the simplest and least effective for draw control. No facility for draw adjustment is pro-

(Continued on next page)



FOR LARGER DIAMETER ROLLS, operator with Langston Torque Control Drive can use this rewound roll control to obtain softer or harder rolls.



PRECISION WEB TENSION CONTROL. As the winding operation progresses on this Langston shaftless stand and Speedmaster winder, tension is automatically reduced to compensate for increasing roll weight. This is important to achieve uniform roll density of critical grades.

To Wind Better Rolls

(Continued from preceding page)

vided, and the gear ratio between drums must therefore be a compromise to suit numerous conditions.

- A single motor drive with cone pulley or vari-pitch sheave on the torque control drum is an improvement over the gear driven machine, since draw adjustment can be varied.

- A two-motor drive using a motor of the same horsepower on each drum permits a higher degree of draw control than any of the above. Due to an electrical load sharing tendency, however, complete draw control is not possible as the torque control drum will always be putting some draw on the roll. This drive is a distinct improvement, however, and is well suited for many applications.

- A Langston patented drive is the two-motor Torque Control Drive which employs two motors of different horsepower regulated to eliminate the load sharing tendency. Automatic controls reduce the draw as the roll of paper being wound increases in weight. This drive is suited for the most critical papers such as highly dense supercalendered coated publication grades. As utilized in the Speedmaster winder, the Torque Control Drive provides the greatest possible control of roll density.

The rider roll torque input influences to only a slight extent the density of the roll. It is important that this roll be driven, and its torque input must be variable—but if the other conditions

spelled out above are not present, the rider roll effect becomes negligible.

Web Tension Systems

Another major factor influencing roll density is the web tension itself. Several systems of control are available depending on the application.

The simplest is a manual tension control system, where the operator adjusts the tension to suit the diminishing lever arm of the parent roll in an effort to keep the tension reasonably uniform. This system is suited for the simplest application where roll density is not critical, since it is at best a "hit-or-miss" system subject to the skill and attentiveness of the operator.

A more refined system employs constant tension control of various designs. This system can be initially set by the operator according to his judgment of the "correct" amount based on experience, and this tension will be maintained by automatic brake compensation throughout the winding operation. This system is preferable to the manual system for virtually all applications.

For Most Critical Grades

For the most critical grades a *tapered* tension system is employed. This automatically reduces the web tension as the winding operation progresses to compensate for the increasing rewound roll weight, as well as compensate for the reducing diameter of the unwind-

ing roll.

Basically, the initial tension is set, as on the constant tension system, but this amount (let's say 4 lbs. per lineal inch of web initially) will automatically be reduced to an amount such as 2½ lbs. per inch at the completion of the winding operation. This system contributes a further degree of control over the roll density of extremely critical grades.

In summary, roll density is controlled by the following factors:

- I. Paper roll nip pressure on drums
- II. Draw control between drums
- III. Web tension

These factors are determined and controlled on Langston Speedmaster winders as follows:

Factor I—Paper roll nip pressure on drums

Controls

- a. Large diameter drums
- b. Automatic rider roll weight compensation
- c. Automatic rewind shaft lift

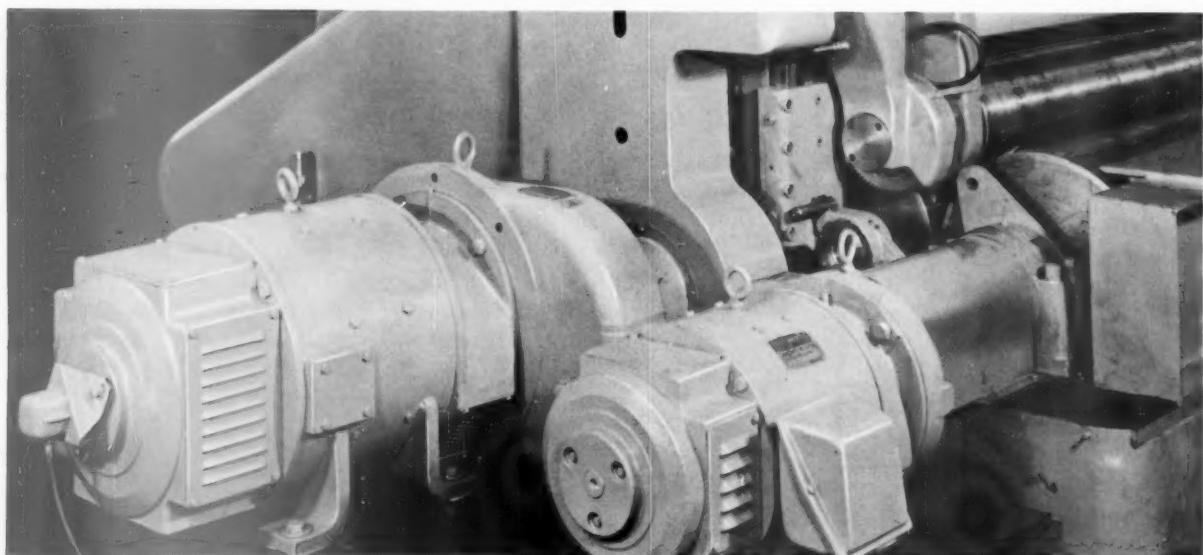
Factor II—Draw control

- a. Thread-up between the drums
- b. Automatic draw compensation by regulated two-motor drive

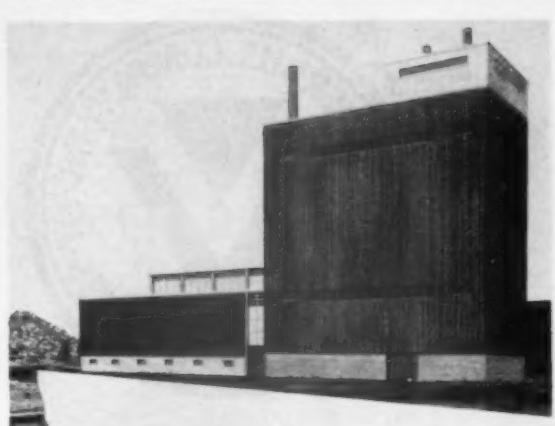
Factor III—Web tension

- a. Tapered tension control.

The necessity of controlling these areas becomes obvious to those experienced in attempting to produce excellent quality large diameter shipping rolls of uniform roll density.



TWO-MOTOR LANGSTON TORQUE CONTROL DRIVE. Automatic controls are regulated to eliminate the load sharing tendency of the drums.



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Hwd. sached.	185.00/140.00	—	140.00/ —	—	—
.....	180.00/140.00	—	—	—	—
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.....	—	130.00/135.00	—	—	—

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June 12, 1961

**PULP &
PAPER**

NUCLEAR POWER PLANT . . .

The Industry Could Have One by '64

By S. B. BURWELL and C. S. BURTNETTE
Nuclear Power Dept., Allis-Chalmers Mfg. Co., Washington, D.C.

OPERATORS OF INDUSTRIAL plants using large quantities of process heat may find it to their advantage to look closely at the U.S. Atomic Energy Commission's plans to build a process-heat nuclear reactor as part of its nuclear power demonstration program.

They now have the opportunity to participate in the program as operator-lessee (with option to buy) of a Demonstration Low-Temperature Process Heat Reactor. This reactor (originally designed by the Allis-Chalmers Mfg. Co. as the Experimental Low-Temperature Process Heat Reactor) will operate at a thermal power of 40,000 kw. When a suitable

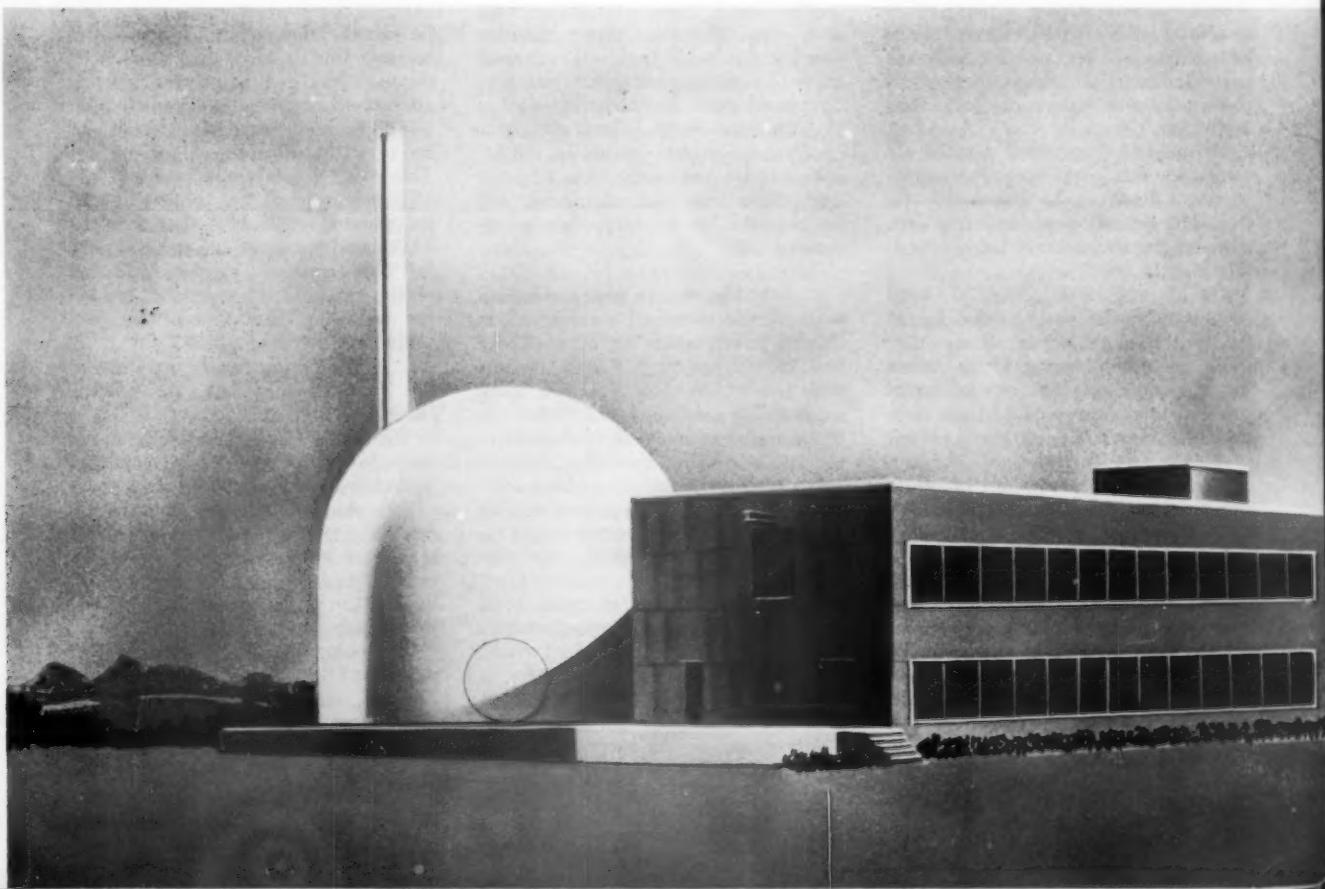
site has been chosen, the reactor will be built as part of the AEC's program to demonstrate the economic feasibility of various reactor types.

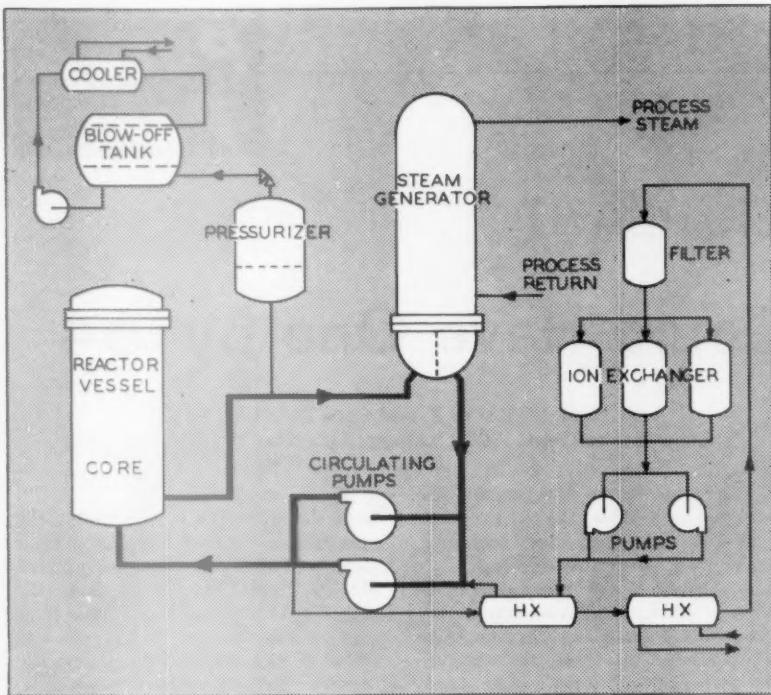
To encourage the participation of public utilities and private companies in the field of nuclear energy, the AEC will construct and own the reactor. The participating organization must provide the site, have a need for the steam, operate the entire plant for at least five years as part of its process-steam installation, and purchase the steam produced by the reactor. The charges for steam will not exceed the estimated costs from a comparable conventional plant if it were built at

the same site.

At the end of an option period, the operator may either buy the nuclear portion of the plant at a negotiated price, or withdraw entirely from the program. Thus the operator could have at least five, and up to ten, years in which to gain nuclear-plant operating experience at conventional steam costs, and to evaluate the economic outlook for nuclear power in his plant.

By testing and evaluating this reactor as a source of process steam in a region of high prevailing steam costs, the AEC will gain information leading to lower costs for





future process heat reactors. Most of the tests will be aimed at demonstrating reliability while using inexpensive component materials. This reactor will also furnish data that permit accurate estimates of operating costs for a nuclear process-steam plant.

For these purposes, an industrial plant whose steam demand is both substantial and steady is required. It is also desirable to build this reactor near existing boiler facilities, to permit periodic reactor shutdown, particularly during the early stages of commercial operation.

Because AEC approval must be obtained for this installation, the reactor site will have to be reasonably far from any densely populated area (the distance to the nearest large city is particularly important).

On May 9, 1961, the AEC issued an invitation for participation in the demonstration project to all organizations using or planning to use steam in a manufacturing or industrial process. Interested organizations were asked to submit information to permit preliminary evaluations of the acceptability of their site, of their process-steam requirements, and of their ability and willingness to carry out the project.

Twice as much fuel is used to produce heat for industrial processes in the U.S. as to produce electric power. Nuclear energy cannot, therefore, be considered applicable only to the power industry. As nuclear power becomes economically competitive, it

will become increasingly important in generating process steam for industry. Because the capital, operating, and fuel costs of a nuclear process-heat plant are so different from those of a conventional plant, the competitive standing of nuclear process heat will depend on local fuel costs, the cost of money, and technological advances.

The lower costs of nuclear fuel, and especially the lower handling charges for such fuel, are advantageous to plants that must transport coal or oil great distances. The cost of the uranium burned (including use charges on all fuel stored in the reactor) is approximately 20 to 22 cents per million Btu and, of course, will be reduced by improvements in reactor design.

The fission process differs from simple chemical combustion in that it is impossible to burn all the fuel in the reactor. (Fission process does not occur unless there is a "critical mass" of uranium in the reactor. As the uranium is fissioned, it changes to other elements. Eventually, there is not enough uranium left to be a critical mass and the fission process stops.) Periodically, fuel elements must be removed, uranium purified, and unburned uranium and makeup fuel made into a new fuel element. Total cost of preparation and transportation will about equal cost of fuel itself, so that the direct fuel cost for a process-heat reactor can be expected to total about 42 cents per million Btu. Advantage of nuclear fuel is that

◀ COMPONENTS of nuclear power plant that will be built by government.

only about 2% of the heat purchased is lost. A coal, oil, or gas furnace loses approximately 15 to 20% of heat to the stack. The nuclear-plant fuel cost, 42 cents per million Btu, corresponds to a conventional-plant cost of about 36 to 34 cents per million Btu. Thus, nuclear fuel, taken by itself, enjoys a significant cost advantage over coal and oil in many parts of the U.S.

Reduction of higher capital cost of a nuclear plant is the prime target of both the AEC and the nuclear industry. As experience is gained in the design and operation of these plants, this cost disadvantage will see important reductions. Operating crews for nuclear process-heat plant will be larger and higher-paid than those for a conventional plant. For example, the annual salary for an operating crew is estimated at \$150,000 to \$160,000 for this plant, \$70,000 for the coal-fired plant, and \$65,000 for the oil- or gas-fired plant.

The pressurized-water reactor is a well-developed and proven type of reactor, and is being used in a number of large electrical power plants and in our nuclear submarines.

No problem should be posed by installation of a nuclear reactor for a process heat plant, although a number of questions not normally considered in a conventional plant would be raised. These relate to radiological hazards that might result from accident. Federal regulations require that all private reactors be licensed. (Actually, both a construction permit and an operating license are required.) The AEC grants these licenses only after it is satisfied that the reactor can be operated without undue risk to the health and safety of the general public. This requires a careful evaluation of the site and the reactor. Data on the following factors must be presented for this evaluation:

(1) **Population density and use of the land surrounding the nuclear facility;**

(2) **physical characteristics of the site** (including seismology, geology, hydrology, and metrology); and

(3) **characteristics of the proposed reactor** (including the proposed maximum power level, the use of the facility, and the state of the technology for the proposed reactor type and its operating conditions).

Technology of this reactor is well developed. Similar and much larger reactors, with both higher pressures and higher temperatures, have operated for extended periods.

What makes nuclear power plant tick . . .

The core is contained within a cylindrical reactor vessel, which is slightly over 16 ft high and 5 ft ID. The reactor core is composed of 128 fuel assemblies. Each fuel assembly is made up of 25 fuel rods in a 5 x 5 array. The fuel rods are 0.500-in.-OD stainless-steel tubes almost 4 ft long filled with uranium dioxide pellets. The total length of a fuel assembly is slightly over 5 ft.

Core is two-pass type in which coolant enters the vessel and is directed up through the core support plate and the first-pass fuel elements and control-rod passages. A shroud divides the core into cells of four fuel assemblies each. Twelve cruciform control rods move vertically in guide slots between the cells to control the fission process. The shroud also prevents internal crossflow. After the coolant leaves the first pass, it reverses and flows down through the remaining (second-pass) fuel elements and control-rod slots.

Heavy steel plates between the core and the vessel wall prevent overheating of the wall. The vessel is surrounded by a thick concrete biological shield for protection against the radiation emitted by the fission process. The inner wall of this concrete shield is lined with lead. Cooling tubes embedded in the lead carry off heat to prevent excessive temperatures in the concrete.

A spent-fuel storage pool next to the reactor forms part of the biological shield. After a storage period, the spent-fuel is placed in a lead shielding cask and is reprocessed.

Steam cycle has two loops: the reactor (primary) cooling loop and the process-steam loop. The reactor cooling loop transfers heat from the core to the tube side of a steam

generator; water in the other loop passes through the shell side of the steam generator, where it is converted to process steam.

Water flows through the reactor cooling loop at about 10,000 gpm and removes heat from the core at the rate of 40 Mw, or 1.37×10^8 Btu/hr. In passing through the core the reactor coolant is heated from 400 F to 430 F. When it leaves the steam generator, where it is cooled to 400 F, the water passes to the suction-side headers of two 5000-gpm centrifugal pumps, which return it to the reactor vessel. An electrically heated pressurizer keeps the reactor-coolant outlet pressure at 975 psia; this prevents boiling of the coolant as it passes through the core and provides for changes in coolant volume owing to system load changes.

Primary cooling system has its own filters and ion exchangers, which maintain water purity. Two small heat exchangers (one regenerative) cool the small amount of bypass water routed through the ion exchangers to a temperature that will not damage the resins.

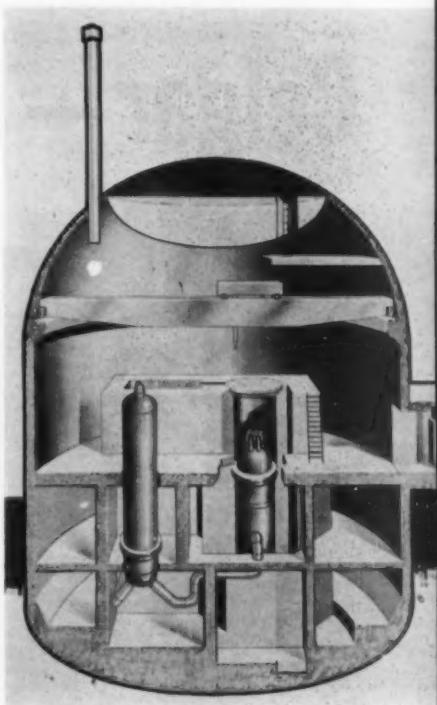
In the process-steam loop, 137,240 lb/hr of feedwater at 230 F enter the shell side of the steam generator. Heat from the primary loop converts this to steam at approximately 196 psia and 380 F. (The design process-steam conditions may be easily changed to suit the requirements of any specific process if the temperatures do not exceed 380 F.)

Auxiliary systems cool the thermal shield and the spent-fuel storage pool. A small cooling tower furnishes coolant for these two systems and for the non-regenerative demineralizer heat exchanger, and the blowoff-tank cooler. Heat losses to all these systems amount to only about 2%.

How nuclear power costs compare with conventional costs

Capital costs are higher for nuclear plants than for conventional plants. Reasons: Need for great precision, use of unconventional materials, requirement of extensive pre-operational testing of nuclear equipment, and need for radiological protection. Higher capital costs or fixed charges of a nuclear plant presently limit its attractiveness to those users who require continuous operation at a high load factor. The following table compares capital costs of nuclear, coal-fired, oil-fired, and gas-fired process-steam plants producing 125,000 to 136,000 pounds of steam per hour (rated at 40,000 kw of heat or 1.37×10^8 Btu/hr.).

	Capital Costs	Capital Cost Factor Nuclear/Conventional
Nuclear plant	\$4,361,000	—
Coal-fired plant	1,950,000	2.24
Oil-fired plant	1,160,000	3.76
Gas-fired plant	1,070,000	4.08

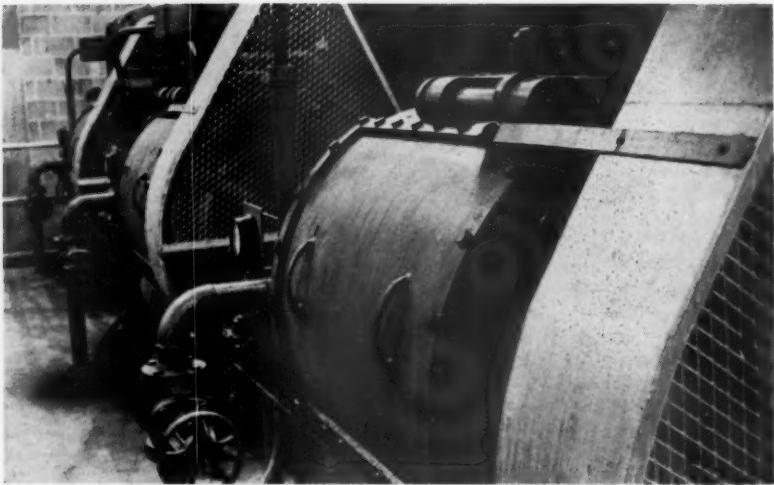


The reactor and all primary cooling equipment are within a containment shell. This is a vertical cylindrical tank designed for an internal pressure of 31 psig. It will safely hold all the steam flashed from the primary coolant system if a pipe ruptures. The building is 56 ft in diameter and 80 ft high in the center. It is sealed whenever the reactor is operating. Access is through an airlock, so that the containment cannot be compromised by persons entering or leaving the building. All heating, ventilating, and air-conditioning ducts have valves that close automatically if a malfunction is indicated. A 25-ton overhead polar crane handles the fuel-shipping cask and the heavy concrete blocks used for shielding throughout the building.

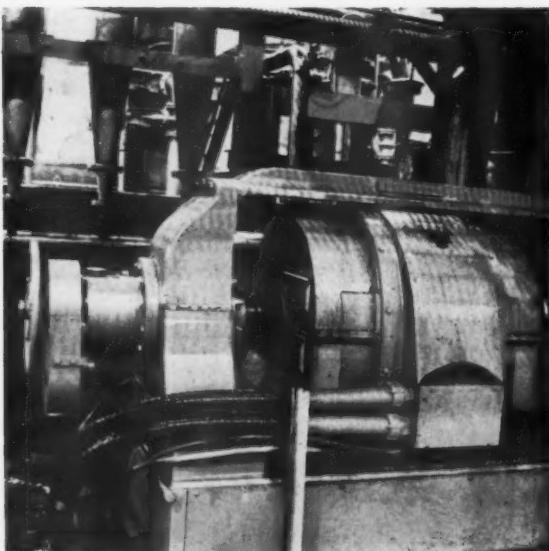
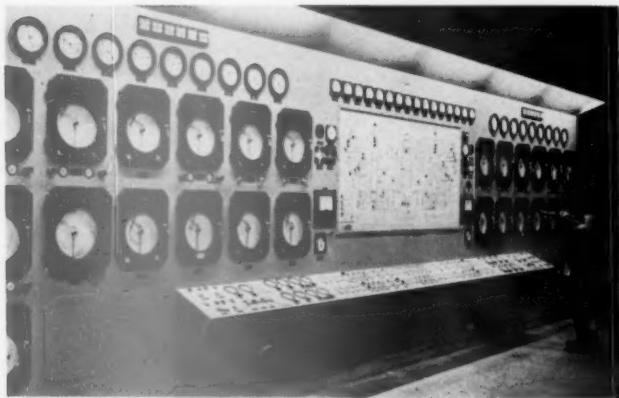
Service building, next to the containment shell, is approximately 40 ft wide, 80 ft long. Building houses the motor control centers required by the reactor and its process system. The reactor will require about 750 kva at either 12 kv or 480 v. The reactor control room, offices for the superintendent, operators, health physics staff, and all general office help, and change and rest rooms are also in this building. The containment-shell airlock connects the two buildings. ■

In words and pictures, Western Editor
Louis H. Blackerby takes you through the
newest pulp mill in British Columbia . . .

Celgar — In Pictures



1 TWO CONTINUOUS Kamyr digesters (top left) are rated at 275 tpd each. Tile-lined corrugated aluminum-covered towers of five-stage bleach system include (l to r) chlorine, caustic, ClO_2 , caustic and ClO_2 . From blow tank, stock goes to rotary knotters (right) and to brown stock washer.



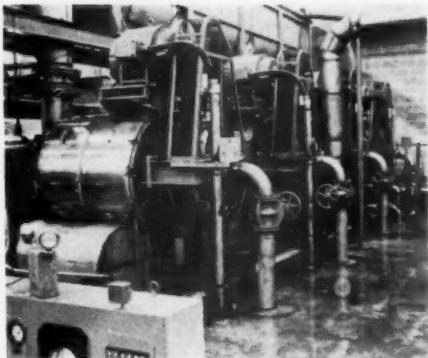
3 MASTER PANEL on operating floor gives operator complete production control from chip silos to brown stock washers. Kamyr panel has Taylor recorders and controllers. Screen rejects from Cycleans (rear) and secondary screen move from tailings chest to Sprout, Waldron disc refiner for further processing.

Although Celgar's original tree farm commitment specified construction of a 300 tpd pulp mill, these specifications were exceeded by 200 tpd almost from the start. First unbleached pulp was made late last year, bleached pulp ready for sale early this year.

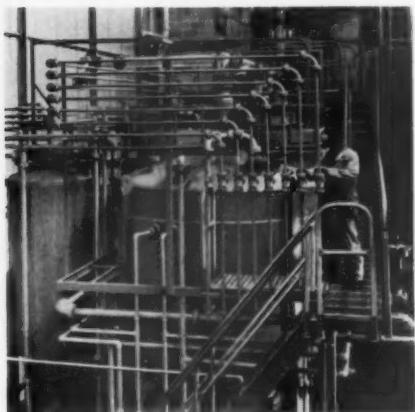
H. A. Simons, Ltd., Vancouver consulting engineering firm, was responsible for designing and engineering the mill, with Celgar retaining final authority for all phases. Said one company official:

"This arrangement has been satisfactory . . . and resulted in good utilization of experience and technical skills from both organizations."

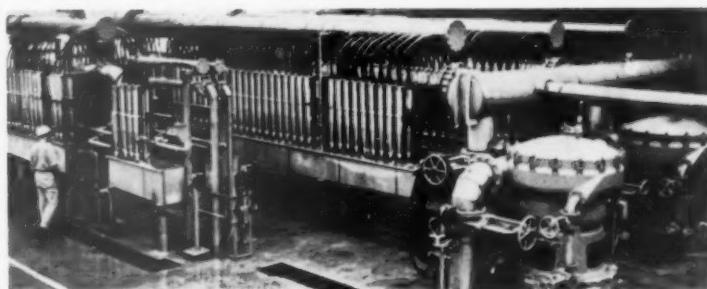
There was no general contractor. Instead Simons' field organization coordinated the work of some 40 contractors handling specific work phases. Most of the participants worked on a unit or firm-price basis, with only a "very minimum" cost-plus. Despite predictions to the contrary, the system proved "expeditious and economical."



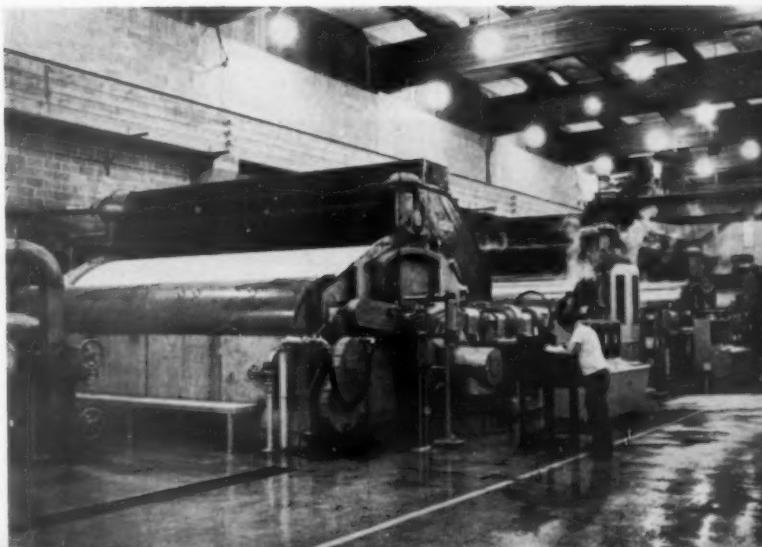
2 FIBERGLASS HOODED washers and deckers. Brown stock moves through 3-stage counterflow washers to screened stock chest, through screens to decker at right to high-density storage. Washed stock is screened in four primary, one secondary Cowan screens from headbox, top left.

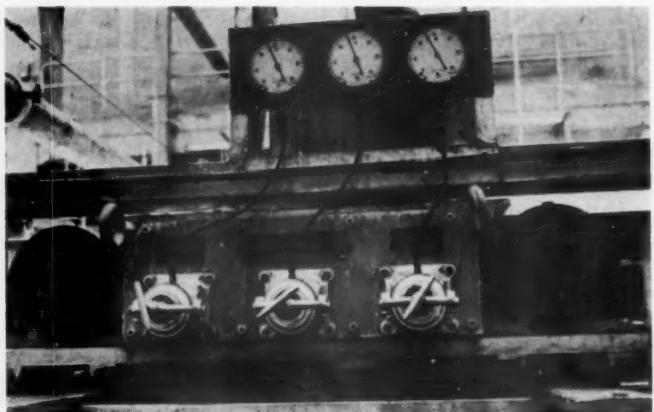
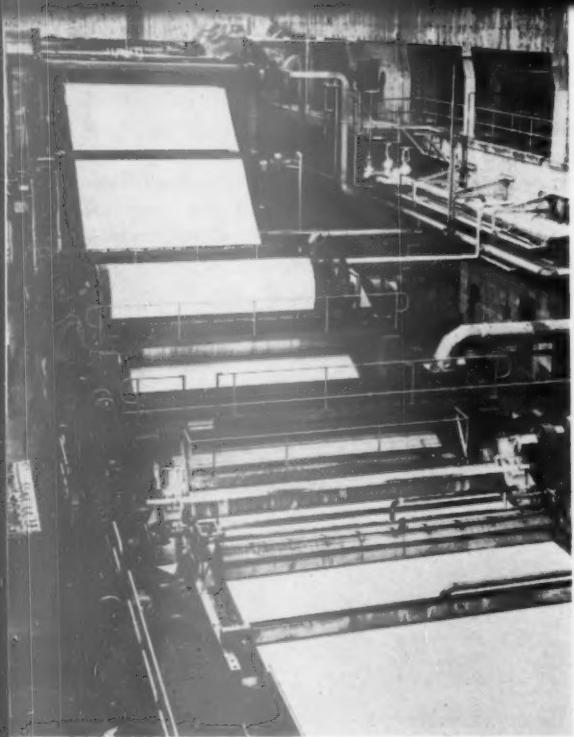


4 BLEACHED PULP is cleaned in three stages of Centriscreens, four stages of Cycleans. ClO_2 is generated in Electric Reduction Co. (Mathieson) plant, for the five-stage 500 tpd bleach plant.



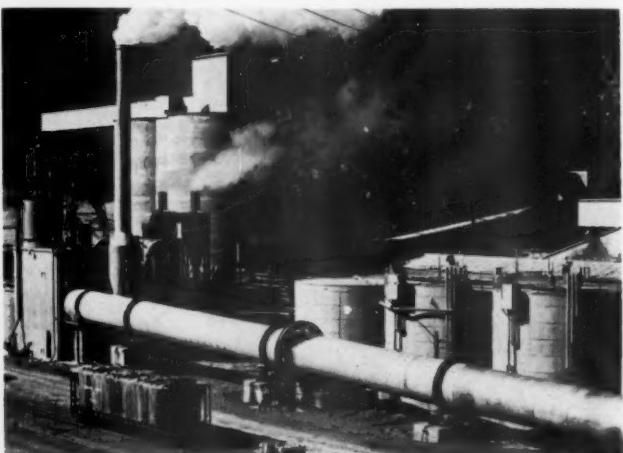
5 BLEACHED WASHERS are positioned on operating floor opposite brown stock washers and also have SF Products fiberglass hoods. Sherbrooke washers are $11\frac{1}{2}$ ft. by 20 ft. Resultant pulp after fifth stage (including two chlorine dioxide stages) has brightness of 90 plus.





6 FROM BLEACHING, pulp goes to 202-in. John Inglis Fourdrinier machine, at left. It includes two suction presses, two pre-dryers, a plain third press, followed by transfer section ahead of the dryer. In foreground stretching across wire is a Dupasquier hot-water box and dripless steam pre-heater. The pre-heater is located directly over Rotabelt shown above. The units are designed to increase drying capacity, increase wire life. The 192-in. wet end has produced more than 500 tons/day since startup.

These are the outstanding features of Celgar's power, recovery systems

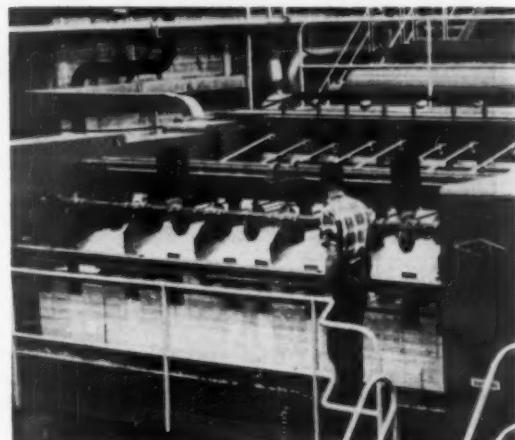
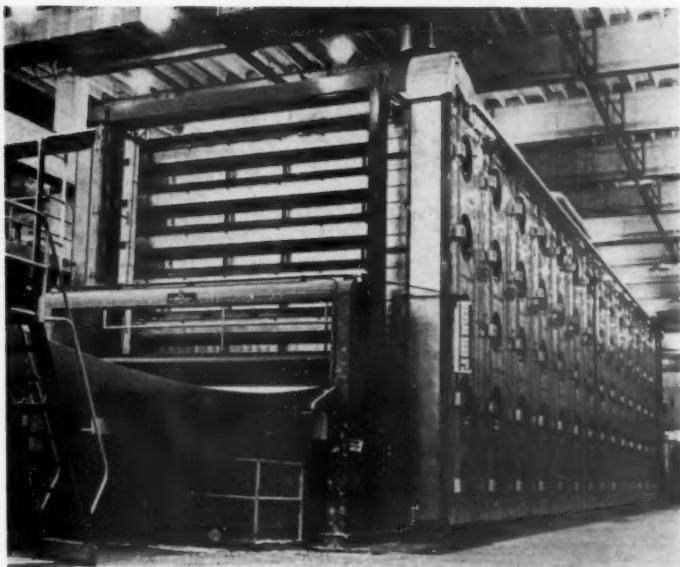


8 CAREFUL DESIGN resulted in considerable reduction of steam and recovery plant floor area without sacrifice of working space; work scheduling also effected savings.

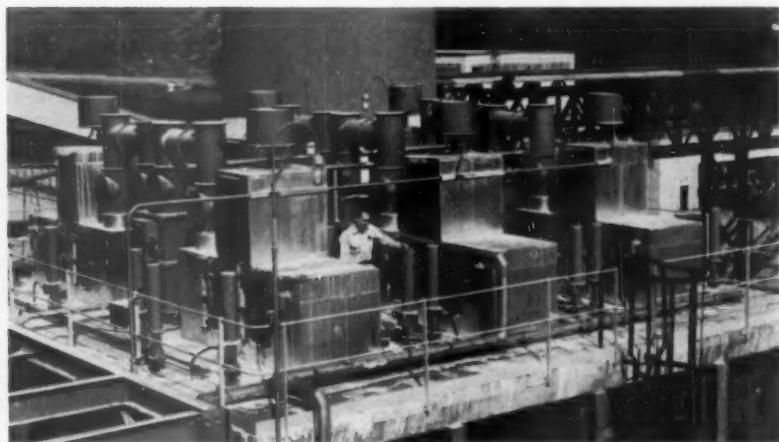
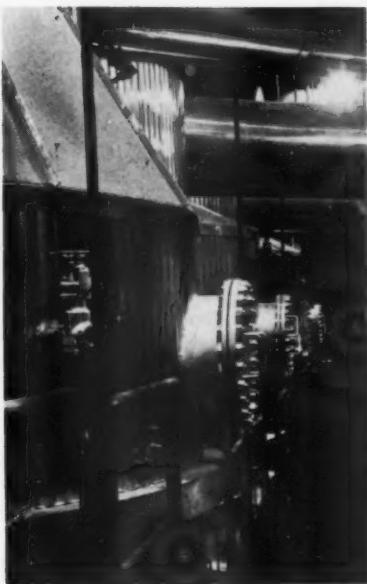


9 MASTER PANEL provides tight central control. Power boiler, recovery boiler, and evaporator instrumentation are all contained in a single unit, left. The causticizing system shown above includes a 10x250-ft. Smidth lime kiln as well as a complete Dorr-Oliver system which includes slakers, causticizers, clarifiers, filters and washers. Entire system is contained in tight area near power and recovery system.

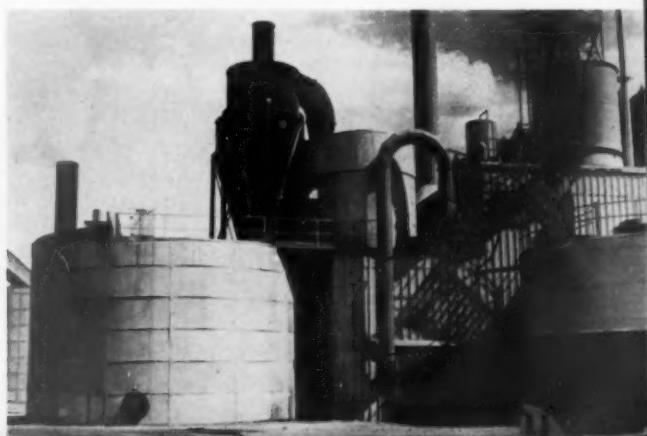
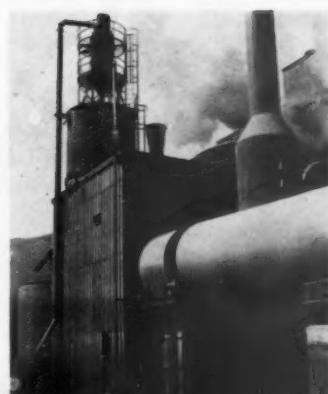
... Celgar in pictures



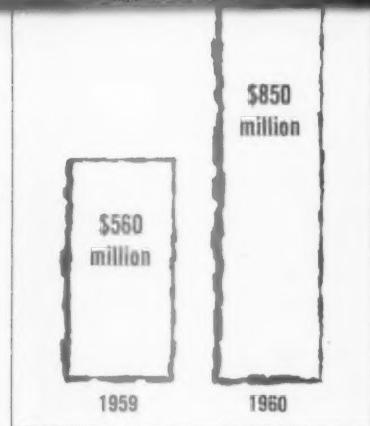
7 HIGH-BRIGHTNESS pulp emerges from airborne-type SF Flakt dryer, first unit of its type in western Canada. Pulp web floats on air which is heated by steam coils, makes 17 passes through 125-ft. dryer, which is equipped with 148 fans. Lamb-Grays Harbor finishing system, above, sheets pulp.



10 RECOVERY EQUIPMENT includes wet bottom electrostatic precipitator for recovery of fly ash, dust, chemicals, above; evaporators encased in corrugated aluminum, left; oxidation system which operates at better than 99% efficiency in processing weak black liquor, below; newly developed Rader Pneumatics system for transferring limerock from rail cars to mud-filter storage silo, shown below left.



For complete list of suppliers, pictures of the men who make Celgar work, turn to 108 wood handling, page 80.



52% INCREASE in Wisconsin paper sales in one year's time is shown.

WISCONSIN RAPIDS, WIS.—Wisconsin's paper industry has set a pattern for industry cooperation on a number of fronts which may serve as a worthwhile model for other states where pulp and paper rank as major industrial products.

This was pointed up sharply recently at annual meetings of two Wisconsin groups—the Wisconsin Paper Industry Information Service, which met one day at the Bullseye Golf Club in a piney outskirt of "the Rapids," and Trees for Tomorrow Inc., which held its annual meeting at Merrill, up the Wisconsin River from here.

These are just two of the industry-sponsored cooperative groups. Others:

The Sulphite Pulp Manufacturers Research League, which is still predominantly made up of Wisconsin-members mills, but which has generously admitted a few interested out-of-state members in recent years.

The Wisconsin Paper Group, in which 35 paper mills and converters have been pooling car shipments for many years.

The Wisconsin Roadbinder Association, in which nine mills, at last reports, were providing 30% of their lignin for road covering in the state during the summers.

The Institute of Paper Chemistry, the industry's own research center and its only graduate school, founded at Appleton by Wisconsin mills 32 years ago. It now has over 120 mills as members.

"It seems like any time you ask a Wisconsin mill to join in some industry-wide cooperative project, it responds with enthusiasm—and more important, perhaps—with the necessary generosity, too."

That's the way one close observer of these matters described the Wisconsin "spirit" for cooperative pulp and paper ventures.

"Wisconsinites are a special breed of paper people, I guess. They certainly have a high sense of industry citizenship and responsibility." So

Wisconsin Teaches Lesson in Cooperation

Industry-sponsored joint action groups abound in "No. 1 Paper State"

commented an out-of-stater, discussing this unusual record of the Wisconsin mills with a **PULP & PAPER** editor.

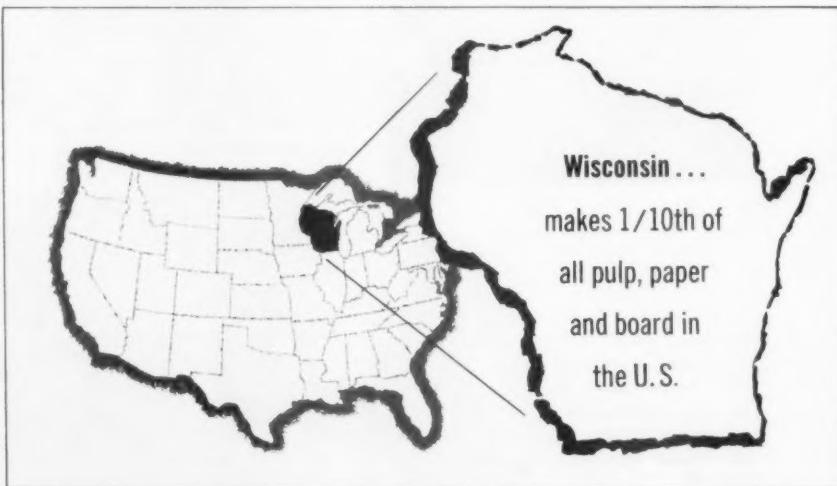
Could it be that this spirit has played at least a small part in the achievement by the state of leading all others in the U.S. in paper production? Wisconsin passed New York as No. 1 state in paper in 1955 and in the past few years was the only state producing well over 2,000,000 tons a year. Perhaps some Southern states are challenging for the honor but in variety of grades and in value of product, Wisconsin is still No. 1 Paper State.

Expenditure of \$40 million on seven new paper machines recently installed or on order (Consolidated at Whiting, Kimberly-Clark at Niagara, Nekoosa-Edwards at Nekoosa, Wausau Mills at Brokaw, Nicolet at DePere, and Charmin at Green Bay) will keep Wisconsin in No. 1 position as a paper producer, according to M. J. Schulenburg, director of public relations for Kimberly-Clark, and retiring general chairman of the WPI Information Service.

WPI Information Service has been doing an outstanding cooperative job

in community and public relations for ten years. The keen interest shown by presidents, executive vice presidents or other top executive officers of the 21 member mills has assured its success. Many of them were present at the meeting here. It is their practice to join with their public relations directors in discussing and planning the Information Service activities. In the ten years of its operation, newspapers, radio and television stations of Wisconsin have accorded generous space and time to Information Service material. And respect for the Service's integrity has grown to a point which should make many other pulp and paper areas quite envious.

PULP & PAPER, in Dec. 1959, described how the Information Service operates and especially its frequent "Workshops" which are unusual examples of "give and take" and exchange of ideas among the mill members as to news policies. It was not long before the American Paper & Pulp Assn. took these "Workshops" and other Information Service activities as models for the Community Relations Committees which APPA sponsored in several paper and pulp regions of the country.



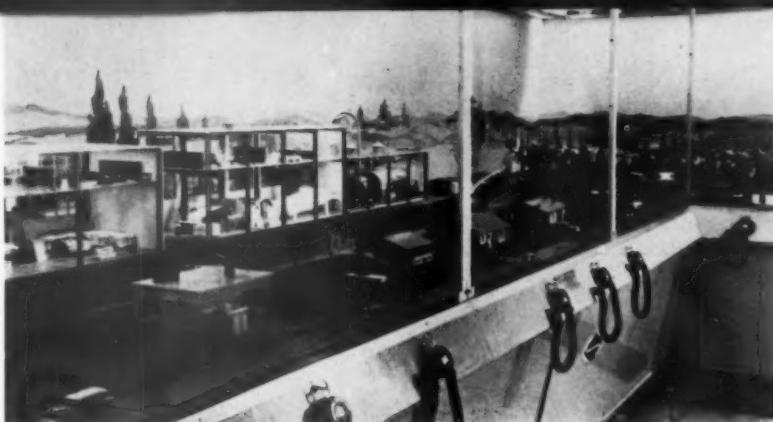
Cooperative pool car shipping has been operating since 1935. And while there is a smaller group in the Miami Valley of Ohio, another group in Delaware Valley, both serving paper industries, the Wisconsin organization is the oldest and by far the biggest. Irwin Pearson, executive secretary, holds forth in an office right alongside the railroad tracks in Neenah, Wis. Leo Schubart, former president of Neenah Paper Co., also served many years as secretary-treasurer. Over 3,000 pool cars are sent to all points in the country each year (of course, companies ship in their own cars, too).

Sulphite Pulp Manufacturers Research League has pioneered several new methods of abating or using sulphite effluent, was the real birthplace of the yeast company now in business alongside Rhinelander's mill. More members have been admitted—from coast to coast.

Folke Becker, board chairman, Rhinelander Paper Co., served nearly 17 years as president and Dave Smith, president of Wausau Paper Mills, served a like period as secretary-treasurer of Trees for Tomorrow, Inc., and were among its founders. E. B. Hurst of Consolidated Water Power & Paper and Norman S. Stone of Mosinee Paper Mills are their successors. M. N. Taylor is executive director for the 18th year (see PEOPLE).

Mr. Becker—also a leader in the formation and activities of the Sulphite League—made his 17th and last annual report at the recent Merrill meeting. He pointed out that nearly six times as many trees were planted by private landowners in Wisconsin in 1960 as compared with 1944, the year the association was founded. Over 44 million were planted last year. Besides stimulating and aiding these plantings, the association started the first camp of its kind for education in resources. This study camp, held every year, always draws a capacity attendance of 4,000 pulpwood croppers and others. The association has prepared management plans for 250,000 acres of private woodlands.

The Institute of Paper Chemistry is a story in itself. On May 25 and 26 it held its 25th Annual Executives Conference and top executives of most important mills from all areas of the country attended. But 32 years ago it was just an idea in the minds of a small group of Wisconsin paper men. Chief of these was Ernst Mahler, former executive v.p. of Kimberly-Clark. He saw a cherished dream come true as the Institute was modeled after his own "alma mater"—the world-famed paper and cellulose research center and school at Darmstadt, West Germany.



PAPER CITY exhibit which tours state has model city in foreground and operating paper machine models in back. When used in schools, description of each paper-making step is fed through earphones as student passes along counter.

What Wisconsin Info Service achieves

IN HIS "FAREWELL ADDRESS" as chairman of the Wisconsin Paper Industry Information Service, M. J. Schulenburg summed up the aims of the service this way: To disseminate information about the Wisconsin industry; promote understanding of industry problems and the effect of these problems on member companies and their communities; to cooperate with each other in carrying out a program.

He noted that the Wisconsin industry, as of March, 1961, was holding well against a statewide trend to reduce employment. Paper mills actually showed a slight increase. "These firms which found it necessary to trim production schedules were generally able to resist major payroll cutting pressures," he said.

What are some of the facts about these mills?

EDITOR ALBERT WILSON of PULP & PAPER was guest speaker at Wisconsin Rapids meeting. He discussed experiences in Russia and Poland, and other European paper trends. (His stories on Russian industry won him first prize Jesse H. Neal award for business editors.)

1. Employment of 39,200 is 9% of state payroll. This does not count thousands more in allied industries.
2. Average weekly earnings for production workers is more than \$100 plus fringe benefits of \$20 to \$25.
3. Wisconsin produced one-tenth of U.S. pulp, paper and paperboard—its total tonnage, more than 3.3 million tons.
4. Leads all states in pulp, paper and board sales with \$850,000,000 in 1960, a big jump over \$560,000,000 in 1959.
5. Wisconsin pulp, paper and board industry pays . . . turn to p. 113



PAST AND PRESENT LEADERS of Wisconsin Paper Industry Information Service (from left): Donald Lichtry, Nekoosa-Edwards, new treasurer; Sam Casey, Nekoosa-Edwards, new general chairman; and Joe Schulenburg, Kimberly-Clark, retiring general chairman.



SUPERVISION METHODS

More money is spent by gov't, industry for on-job training each year than all education below college level . . . Industry's expenditure in 1960: \$30 billion . . . Here are some tips to help

Improve Your Job Training

CONVINCING MILL MANAGEMENT of the need for on-the-job-training is one of the chief problems facing the industry's training directors.

This is the opinion of E. L. Baab, management development and personnel training consultant. Mr. Baab gave pointers to pulp and paper men on how to launch employe education projects, at a special session preceding the 17th annual meeting of the American Society of Training Directors in Philadelphia last month.

He urged training directors to ask the employees themselves to define their problems and to assist in determining their training needs. In addition, he advised that production, maintenance, and service superintendents be put on the committees that will set up the programs.

"The more you involve line people in your program, the better success you will have," he said. "I like to have the line people actually conduct the programs."

Mr. Baab also stressed the importance of following up a survey with actual institution of a program.

Educational assistance programs were compared by means of a question and answer session. Nine questions were asked.

Q. What kind of an education assistance program does your mill have?

A. If the course applies to a man's work, is approved by his bosses and if he satisfactorily completes it, he will be reimbursed 100%. A. 50% reimbursement. A. We pay for the first \$25 and 50% over that. A. We pay only if he takes the complete or a selected course. A. We have two

plans: one for college and one for non-college. Courses must be approved. We pay 60% for each course plus 40% on completion. He must have at least a C grade.

Q. How is the employe reimbursed?

A. The division manager gives him his check. A. We pay as the man progresses. A. We pay upon satisfactory completion of the course. A. The industrial relations manager sends him a letter of congratulations with copies to his boss and the plant manager.

Q. Who determines whether course is applicable?

A. His direct supervisor. A. If someone wants to take the course to advance himself, he is on his own. We pay only if we select the man. The man who wants to extend into another line is a problem. A. We limit it to salaried people.

Q. Do you have a sliding scale based upon grades?

A. We pay 70% for C; 80% for B and 90% for A. Nothing for D. A. We pay 100% for A and B grades; 75% for C.

Q. Do you offer college scholarships to high school students?

A. Several companies do without stressing any particular curriculum.

Q. Do you offer male teachers work?

A. Most mills do. A. Our company does, but we often ask whether we are subsidizing them when the county should pay them. A. We use women

teachers. We walked into it blindly and came out a million dollars to the good. We hired a commercial teacher and she helped to upgrade our staff. What's more, she has helped send other commercial students to us.

Q. How many students come back to work for the company?

A. We have had such a program for 20 years, and we get about 3 back a year.

Q. How about summer employment?

A. Most companies presently have such a program. A. We offer summer employment to get work done. These kids are valuable.

Q. What kind of a college graduate orientation program do you have?

A. All trainees, about 30 at a time, attend a five-week, eight-hour a day orientation program. Department heads are the instructors. From this engineers go into a six week specialized course. Technical service men have a ten week program. Personnel, sales and accounting go in another direction. This program is now in its second year. Results: They are learning more in this period than any other group. However, the supervisors wish they had something like it. In one sense we are giving the subordinate more information than his boss has.

L. M. Lenzi, training director, The Mead Corp., was general chairman of the meeting. Succeeding him as chairman is Lester C. Anderson, training and safety manager, West Virginia Pulp and Paper Co., Luke, Md. ■

HOW TO DO IT

Problem: Getting samples in limited area

Problem: Obtaining a representative sample from sewer when space is limited.

Place: St. Francisville Paper Co., St. Francisville, La.

Solution: A trouble free self-cleaning sewer sampler is used which is easily adapted to a wide variety of sampling jobs. Designed and built by W. K. Mizell, instrument supervisor at St. Francisville, the sampler works on the principle of a piston operating in a slotted foot. The piston normally rests in the up position, and when activated thrusts downward cleaning the foot (photo left) and filling the inside with the sewer sample. The return stroke upward forces the sample into a container. Simplicity of design and self cleaning features make this sampler very dependable for a wide variety of uses. It can be used in any position, at any depth, and for a wide variety of liquids. Sample size can be easily regulated by changing length of stroke, frequency of stroke, size of foot, or by splitting the sample. This sampler is ideal where limited space is a problem.

The piston, consisting of a rubber gasket between two metal plates, is connected to an air cylinder by a rod inside of a pipe. Action of the piston



is controlled by a 4 way pneumatic solenoid valve operated by air. Air supply is operated by an electric timer. When the timer turns the air on, the piston is forced down, forcing any accumulated sludge out of the foot through the open bottom. At the same time, the volume above the piston is filled with the sample through 4 inverted V slots in the foot. On the return stroke the sample above

the piston is forced up the pipe and out an opening at the top. A hose connected to this opening transfers the sample to a collection drum. An open tee in this hose splits the sample, severing part of it and transferring the rest to the drum. The tee drains the hose until the next piston stroke.

Four of these pumps are in use in our paper mill and all have performed very well with little maintenance.

Problem: How to detect roll troubles

Solution: A special kit devised by Manhattan Rubber Div. of Raybestos-Manhattan, Inc., said to be most effective and least costly method of assuring high quality runs, spotting trouble before it starts.

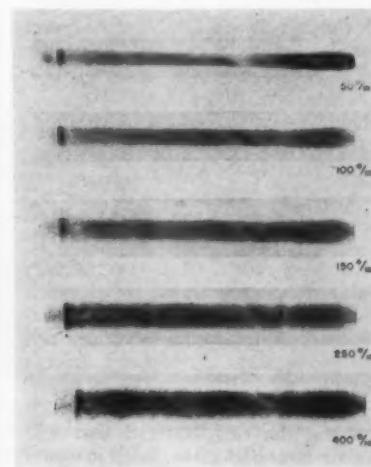
Test set, made up of 200 ft. of a specially developed carbon paper and 200 ft. of white master sheet, comes in a shipping-dispensing carton. Completed record may be stored any place as a complete case history of service life.

New unit is said to provide a completely accurate carbon impression at pressures of from less than 50 lbs. to more than 1500 lbs. per lineal inch. Manhattan nip and crown tester can be used for suction rolls to indicate any tendency to cup in the hole area, flake, crack, or corrugate.

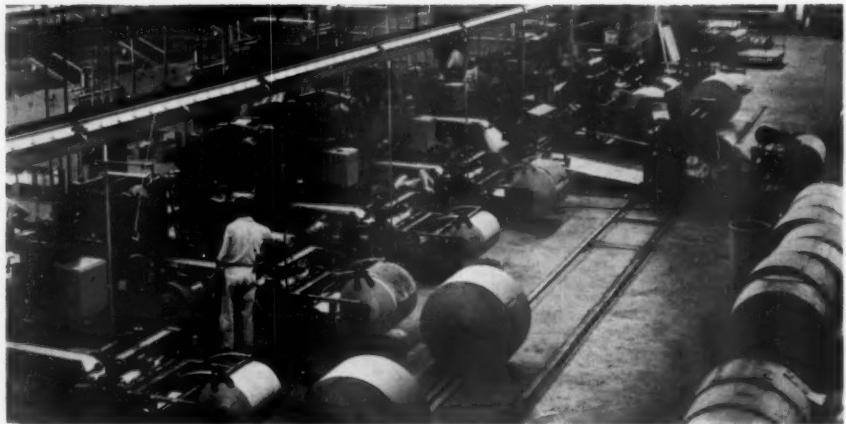
A series of these tests taken over a period of time can indicate roll

failures in advance. Shown are dispensing carton, instruction folder,

typical impressions made with variety of pressures.



LINE-UP OF BAG MACHINES in International Paper's new Los Angeles plant. Track-mounted printing press (right), available to any unit, prints on web as it feeds to bag machine.



Ultra-Modern Grocery Bag Plant

. . . opened by International Paper Co. for West Coast customers.
Converting facility "something different" for Los Angeles

—Los Angeles, Cal. INTERNATIONAL PAPER CO. took forest utilization to heart when it built its newest West Coast facility. The recently-completed grocery bag and sack plant departs from the usual brick and concrete to utilize wood as the primary construction material.

Says J. R. Diehnelt, mill mgr.: "A new structure in Los Angeles is nothing out of the ordinary. But this one is built of wood, and that makes it unique in the area. As it was going up—with its wood trusses, plywood diaphragm roof and high-density overlaid plywood siding, you could see traffic (on the Los Angeles-Santa Ana Freeway) slow down and people in the cars stare as they passed."

Materials used in construction, incidentally, were provided by the mills of International Paper's Long-Bell div. on the West Coast.

One of the most modern converting plants of its kind, the IP unit further refines the fine art of producing good grocery bags and sacks. Operations fall roughly into five categories: receiving, manufacturing, finishing, warehousing, shipping and office.

Production sequence begins with receiving the raw material that will become bags and sacks. Such material

arrives in rolls of 100% Gator-Hide extensible kraft paper from IP's Mobile, Ala. mill. The machines in the LA plant can run brown or white stock, wet-strength paper, waxed, bleached kraft, colors or Gator-Hide.

The rolls of Gator-Hide are 42 in. in dia., ranging in width from 17½ to 37 in. as needed for the bag machines of various sizes.

Printing presses can be used in conjunction with the bag machines. The presses are mounted on tracks so that they can be rolled into position behind any of the units. This flexible

arrangement facilitates use of the presses at whichever machine they are needed to print a customer's name or message on the bags as they are manufactured.

As a roll of paper feeds into one of the bag machines, it is formed into a tube. The machine then pastes the seam, prints a trademark, forms the bottom of the bag and cuts off the finished product. In the space of a few feet, the machine converts the paper into bags and delivers them in groups of 50 to the area where they are inspected and placed in a packag-



HEADING IP's Los Angeles grocery bag-sack plant operation is J. R. Diehnelt (left), mill mgr., formerly asst. mgr. at Mobile bag plant. R. A. McKinnon (center), is mill supt. Charles L. Rehm Jr. (right) is mill agent.

ing machine by the machinetender.

Packaging machines automatically compress and wrap 500 bags in a printed wrapper. The size and quantity in each package are marked on the wrapper.

From these machines, the packages of bags are ejected into a storage conveyor. The conveyors, one for each machine, collect groups of each size bag and hold them until "called for" by the finishing department. They are called for on a control panel in the finishing dept., which releases the contents of each storage conveyor selectively.

In the finishing department

bundlers wrap packages of bags into finished bundles for shipment. From here they are placed on a floor conveyor that transports the bundles to the truck dock, rail siding or the warehouse.

The floor conveyor system consists of about 50 trucks that are constantly on the move throughout the warehouse area. The trucks are drawn by a moving chain under the floor. A pin on the truck extends through a slot in the floor to connect the truck to the chain. The pin engages a lug in the chain, and away goes the truck. The slowly-moving trucks provide a rolling storage for warehousing purposes. They can likewise be rolled by hand for picking up orders from the warehouse and then put back on the moving line and conveyed to shipping.

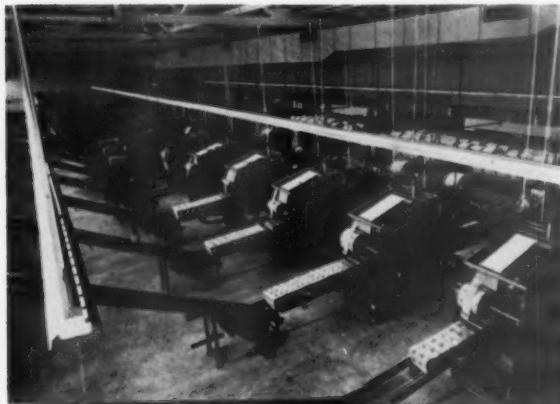
Bag plant moisture content

is controlled by a humidifier—an important feature in bag and sack manufacture. Air conditioning in the plant likewise contributes to a constantly-controlled atmospheric condition that is best for the paper as well as for the comfort of personnel.

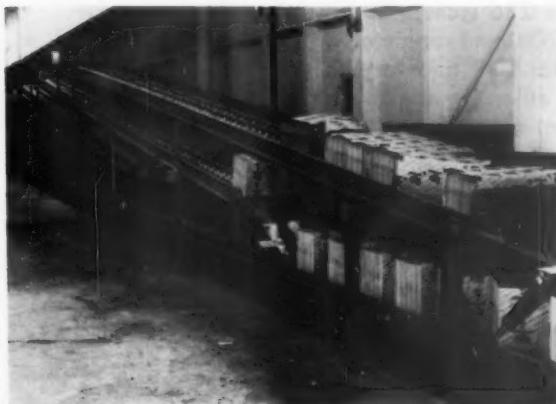
The adhesive room is a glistening area of aluminum and stainless steel. Adhesives are cooked from dry materials and pumped through a piping system direct to the bag machines. The entire piping system is of stainless steel for cleanliness and bacteria control.

Only IP plant making grocery

bags in the West, the factory is one of seven converting units International operates in the area. The company had for years produced grocery bags, sacks, specialty and variety bags in Mobile for West Coast customers. The new plant, built in recognition of increased product demand in the area, now warehouses a complete range of bags and sacks (including both those produced locally and at Mobile) and stocks many grades of wrapping and butcher papers from the Moss Point, Miss. and Mobile mills.



PACKAGING MACHINES, each in line with bag machine, compress and wrap 500 loose bags into tight packages that move up to individual storage conveyors.



PACKAGED BAGS are held on storage conveyors until "called" via remote control panel for delivery to finishing dept. for wrapping as shipping bundles.

Principal Suppliers

Bag Machines, Printing Presses: Davis Machine Co., Camden, Ark.

Bag Packaging Equipment: Hamilton Tool Co., Hamilton, Ohio

Package Conveyors: Alvey-Ferguson Co., Cincinnati, Ohio

Floor Conveyor: Jervis B. Webb Co., Los Angeles

Conveyor Trucks: Nutting Truck & Caster Co., Inc., Faribault, Minn.

Boiler: Orr & Sembower Inc., Reading, Pa.

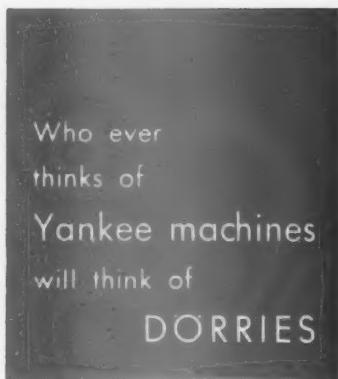
Air Conditioning: Trane Co., LaCrosse, Wis.

Humidifier: Bahnsen Co., Winston-Salem, N. C.

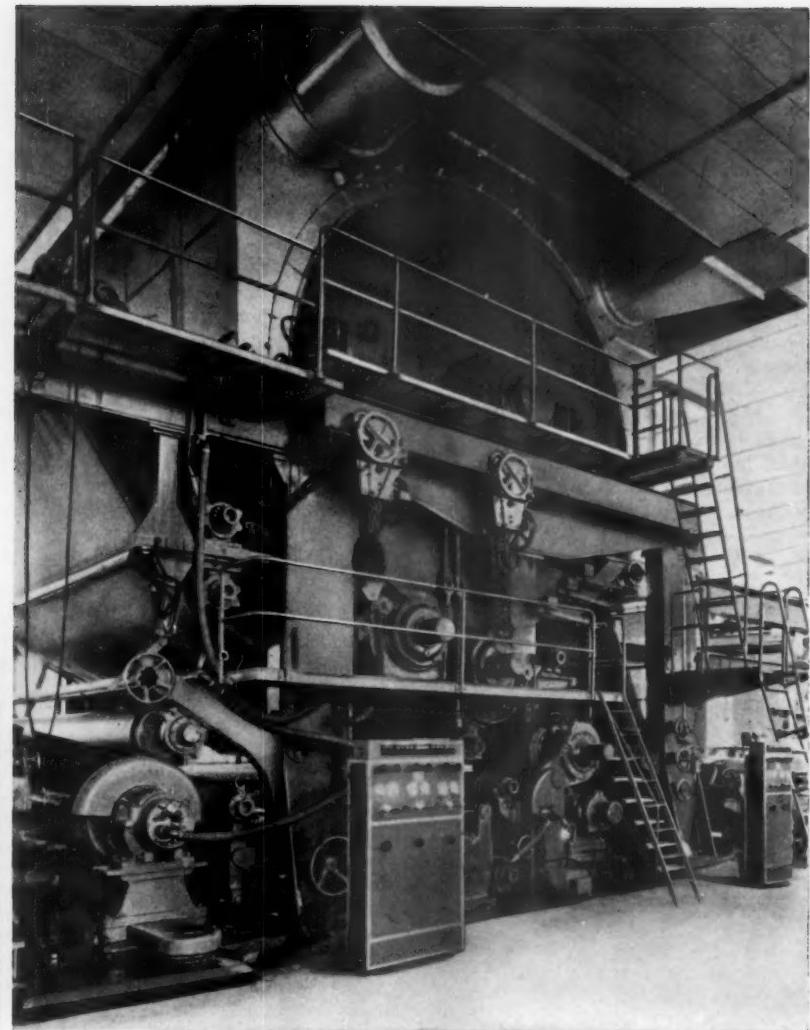
Fork Trucks: Elwell-Parker Electric Co., Cleveland, Ohio; Clark Equipment Co. (Industrial Truck div.), Battle Creek, Mich.



FIFTY TOWVEYOR TRUCKS, continuously towed around warehouse circuit by sub-floor chain, provide steady flow of material to truck and rail loading docks.



Who ever
thinks of
Yankee machines
will think of
DÖRRIES



Our photo shows an M. G. cylinder in a Yankee machine as it is built as one of our specialties



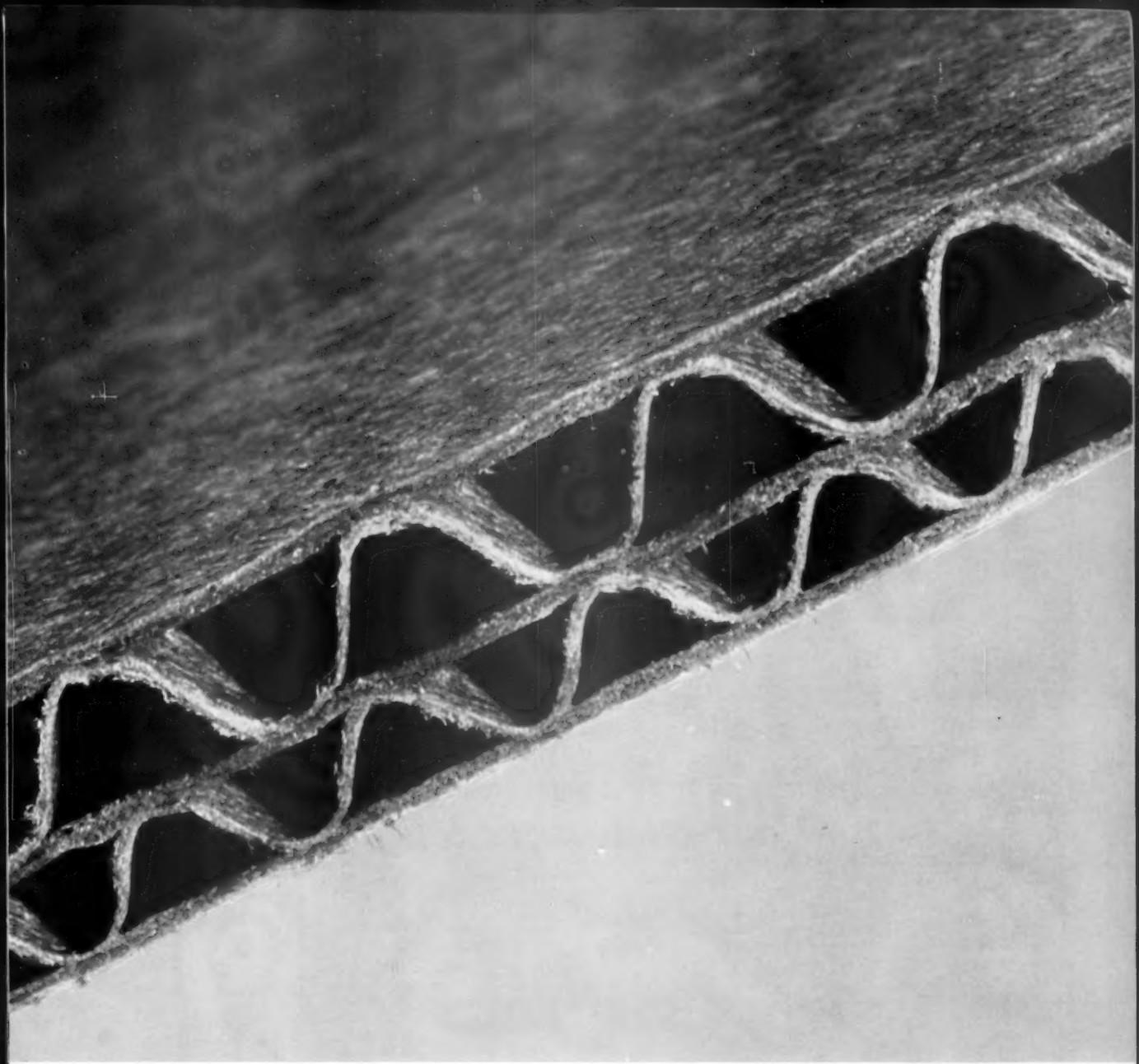
Technical Details:

High pressure flow boxes for speeds up to 1312 feet (400 m) per minute. Wire widths up to 236 inches (6000 mm). Wire suction cylinder about 47 inches (1200 mm) diameter with adjustable opening angle of the suction sector DBP and foreign patent. Suction press with maximum degree of efficiency for all widths. M.G. Cylinder up to 19 feet 8 inches (6 m) diameter for working pressure up to 6 atmospheres. Carrier drum reel (Pope reel) with automatic starting and braking device—DBP and foreign patent for reels up to 79 inches (2000 mm) diameter. The same machine can also be delivered with full automatic operating device.

O. DÖRRIES A.G. DÜREN

Eisengießerei und Maschinenfabriken

Agents: Bulkley, Dunton Pulp Company, Inc. 295 Madison Avenue, New York 17, N.Y. U.S.A.
Telephone: Murray Hill 9-6400 Telex: TWY - NY 1 2092



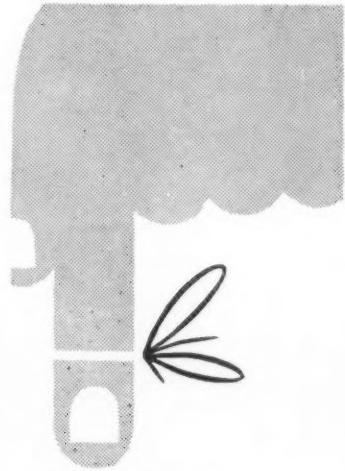
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of starches and dextrines
to meet any operating conditions, try...*



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APPLETON WIRE WORKS Corp.

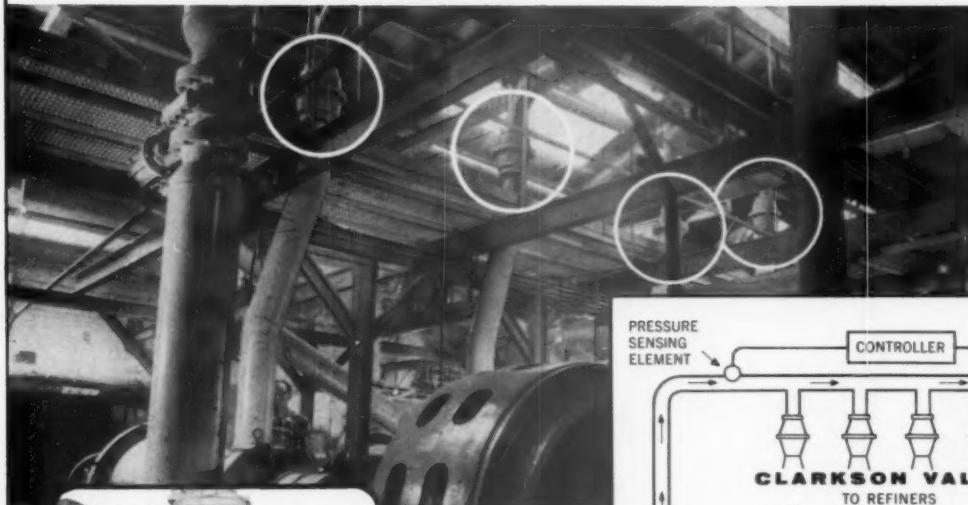
PLANTS AT APPLETON, WIS. AND MONTGOMERY, ALA.
INTERNATIONAL WIRE WORKS, MENASHA, WIS. AN AFFILIATED COMPANY



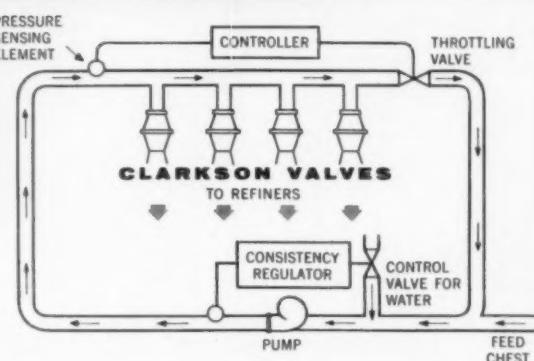
OPERATIONAL DATA ON CLARKSON FLO-CONTROL VALVES

...another case in point!

REFINER PRODUCTION INCREASED AT FIBREBOARD PRODUCTS USING CLARKSON VALVES



TYPICAL REFINER LOOP
AT FIBERBOARD,
STOCKTON, CALIFORNIA
Pressure is controlled by
throttling return to pump.
Head effect is eliminated
by staggering elevation of
each Clarkson Valve.



OPEN valve permits unrestricted flow.



CLOSED valve maintains round, centered aperture through 75% of full control range.

Maximum benefits from the pressure loop system in paper pulp processing are attained at Fibreboard Products by use of Clarkson Valves. Accurately controlling pulp flow in the manner of a variable venturi with smooth entrance and exit areas, Clarkson Valves eliminate pulp build up behind valves and corrosion problems inherent in conventional-design valves. Maximum production is easily maintained by remote control of the valves from a convenient station at the refiner itself.

For detailed description of Fibreboard application of Clarkson Valves, write for Bulletin 2.4-1.

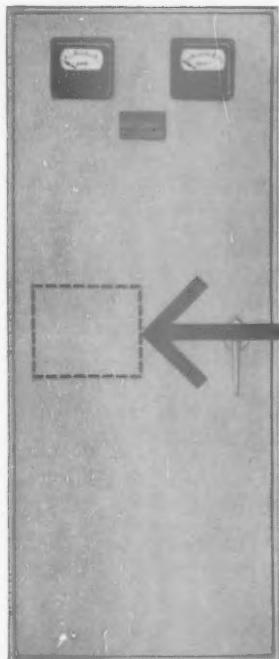


THE CLARKSON COMPANY

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OTHER PRODUCTS: PROPORTIONING PUMPS • FEEDERS

Now...
Westinghouse
Static Slipsyn* Control
includes 3 more static protective
features for synchronous motors



1. STATIC DAMPER WINDING NETWORK

protects synchronous motors against damage by locked rotor or excessively-long starting conditions. This circuit may be quickly and easily added to your present static units.

2. STATIC FIELD LOSS NETWORK protects motors against abnormal conditions resulting from loss of d-c excitation.

3. STATIC INCOMPLETE SEQUENCE NETWORK protects the motor in case it fails to sequence properly during start up.

These features, added to the basic Westinghouse exclusive Static Slipsyn control make Static Slipsyn more than ever, the best control available. Its advantages:

Most accurate synchronization system available—accuracy up to 99% of synchronous speeds — not affected by machine vibrations.

Adjustable pull-out protection—eliminates nuisance tripping due to transient conditions — easily adjusts from the front — can be set to re-synchronize or shutdown on actual pullout.

No maintenance — completely static transistorized synchronizing system — uses no moving parts — components are impervious to humid, corrosive or dirty atmospheres — there are no relays to burn, pit, inspect or repair.

Applicable to all synchronous motor starters—same sized package for all applications — for both high and low voltage — whether for new motor installation or for relay replacement.

For additional information on the advantages of Static Slipsyn Control for synchronous motors in *all* manufacturing operations, call your local Westinghouse sales engineer or write to: Westinghouse Electric Corporation, General Purpose Control Department, P.O. Box 2025, Buffalo 5, New York.

You can be sure...if it's **Westinghouse**

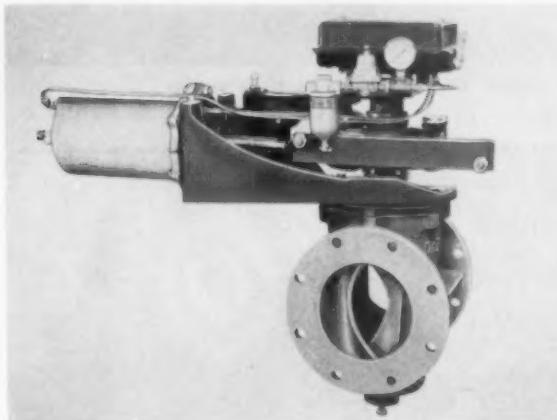


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YOU CALL THE CURVE!

You Get It With
Perfect Control From a
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Just determine the "flow curve" you want . . . almost any curve . . . and this one DeZurik Stock Control Valve will produce an almost endless variety of control characteristics. And they're easily changed, simply by replacing a cam in the positioner.

The diamond-shaped orifice retains the same shape throughout the control range to eliminate plugging. Without sliding plates, this low-friction design needs only a small, compact actuator for smooth operation.



PULP & PAPER — June 12, 1961

SO₂

PURITY

Purity is important—Our basic position enables us to control the purity of our chemicals from the raw materials we mine to the finished products we deliver to our customers.

We offer the Pulp Industry a dependable source of highest purity Sulfur Dioxide.



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ONE MAN-ONE MACHINE

Log Handling with Cat 944



1. "Live-action" hydraulics enable the 944 to pick up a full grapple fast.



2. Good balance, visibility and safe design give 944 operators the confidence to travel fast.



3. Long reach lets operators dump into hot water pond without getting front wheels up to edge.

50,000 BD. FT. PER DAY

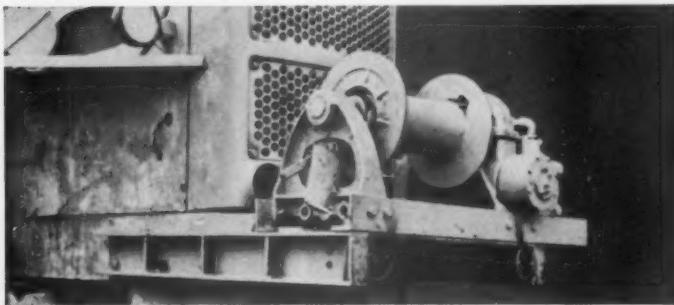
A 944 wheel loader and a competent operator take care of the log handling at the Napoleon Gagnon and Sons Mill near Quebec. The 105 HP 944 carries hardwood and pulpwood logs from the yard stockpiles to the hot water pond, a round trip of 1500 feet. It averages 5.75 loads an hour, up to 24 16-foot logs a load, totals up 5000 bd. ft. per hour—50,000 bd. ft. per 10-hour day.

It's a low-cost, dependable, easy system. **COST SAVINGS** are realized every payday with only one man handling the operation. **DEPENDABILITY** goes on day after day as the 944 does the job without down time, without long service periods. And **EASY** is the best way to describe the whole operation—the 944's wide-open design lets the operator get in and out easily, gives him excellent visibility, safety and confidence (this basic design also provides extremely long reach and high lift; notice the 944 puts logs in the pond without getting the front wheels on the edge of the bank). Big loads are picked up fast by the *live-action* hydraulic system that operates independently of the load on the drive wheels (the pump is geared to the torque converter *input* rather than output or a transmission shaft). The power shift transmission makes maneuvering around stockpiles fast and effortless—a forward-reverse lever on the steering column needs only a gentle push to shift direction with quick, smooth response.

Your Caterpillar Dealer is eager to give you more information about Cat wheel loaders, either the 944, the smaller 80 HP 922, or the big 140 HP 966*. Ask him to demonstrate one on your job. Then switch to lower costs, to dependability in log handling—get a Cat wheel loader.

Caterpillar Tractor Co., General Offices, Peoria, Illinois, U. S. A.

*All flywheel horsepower

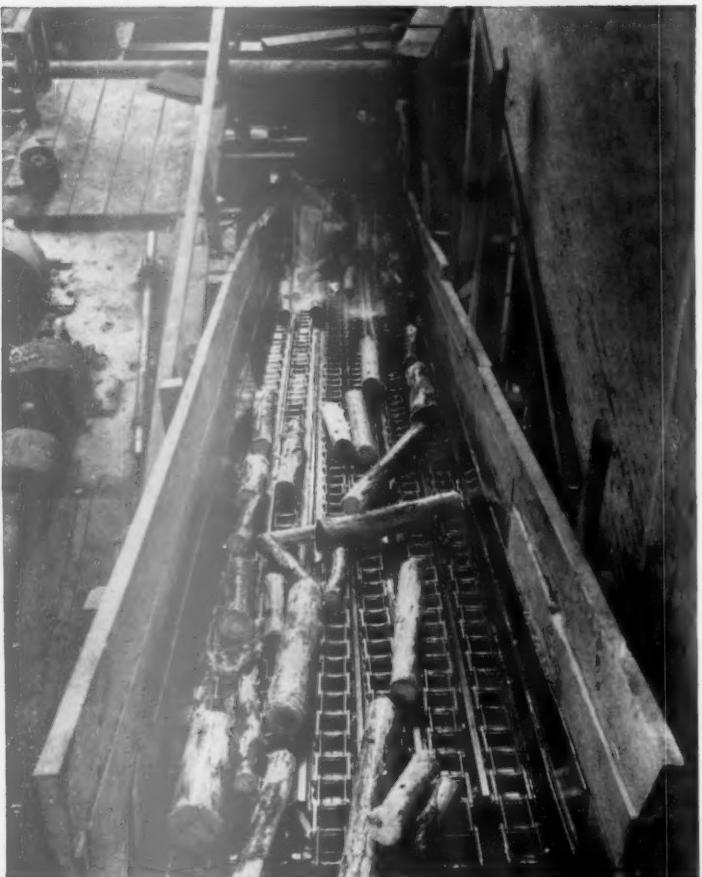


There are many attachments that add to the value of Cat wheel loaders—equip them for dozens of side chores around your mill. Besides this hydraulic winch, buckets, dozers, snow plows and special forks are available from your Caterpillar Dealer.

CATERPILLAR

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CAT LOADERS FOR
SPEED, DEPENDABILITY
AND LOWER COSTS



For efficient
pulpwood handling
specify...

JEFFREY CHAIN

When it's time for chain replacement,
consider these two facts:

- Jeffrey chain is designed for long dependable service—and quality controlled through manufacture from machining and treatment, to assembly and inspection.
- In most types and sizes, Jeffrey chain is interchangeable in dimensions with other leading makes. So getting Jeffrey dependability into your conveying is a simple matter.

Ask your Jeffrey distributor to supply your needs. The Jeffrey Manufacturing Company, 809 N. Fourth Street, Columbus 16, Ohio.



JEFFREY

If it's conveyed, processed or mined, it's a job for Jeffrey.

Versatile chip handling: Gulf States can store purchased chips inside or outside

AS CAN BE SEEN in these illustrations, the chip handling system at Gulf States is both fish and fowl. At its Demopolis mill, purchased chips arrive either by hopper car or truck. A Link-Belt car shaker takes care of rail chips and a conventional truck lift, the "Hydro-Flex" dumps those arriving via the highway.

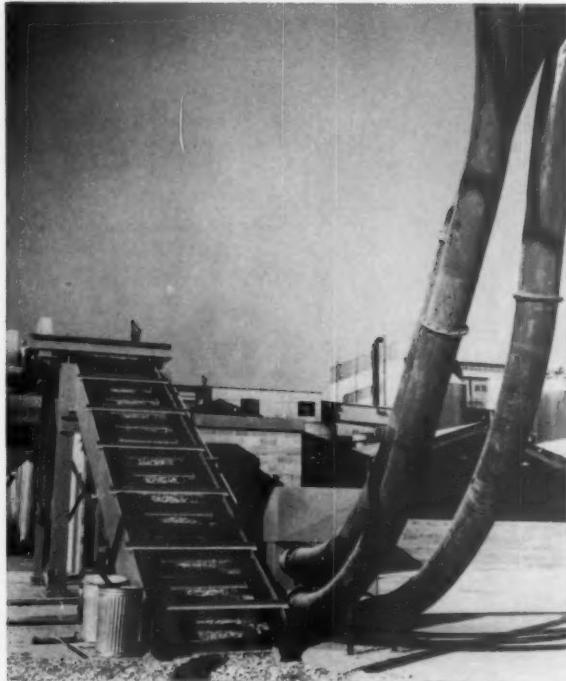
The chip pit runs under the rail spur and has an open pit adjacent for truck dumping. A rake type conveyor in the pit floor keeps the chips dispersed as they are dumped. From the pit, a Rader Pneumatics blower system carries the chips by air either to an outside blower, where they are stored on slabs or to inside storage silos, depending on how they are to be handled.

ARRIVING FROM NEARBY lumber yard, trucked-in wastewood chips are dumped into receiving pit by use of hydraulic lifter. Note rail spur is immediately adjacent.

AIR CONVEYOR is used to blow chips from the receiving pit to either outside hardstands or to chip silos for inside storage.



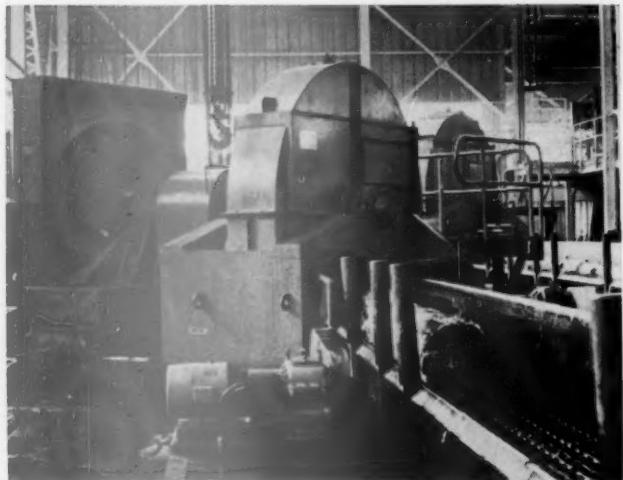
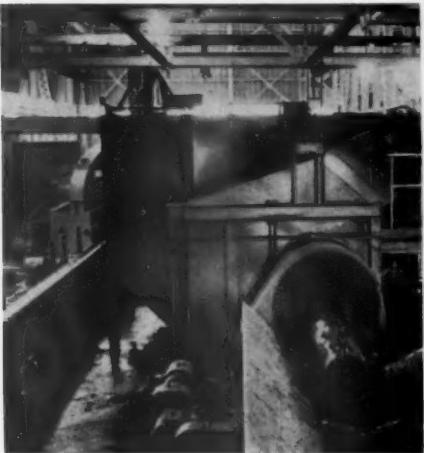
OUTSIDE STORAGE is achieved by pneumatic spout which drops them on desired slabs. The spout is hinged and can be moved in an arc to permit use of several slabs.



How Wood



1 BUNDLED LOGS taken directly from river are delivered by Colby 60-ton crane to sorting-transfer deck adjacent to woodroom. This crane also transfers log loads from rail cars (at opposite end of craneway) to deck.

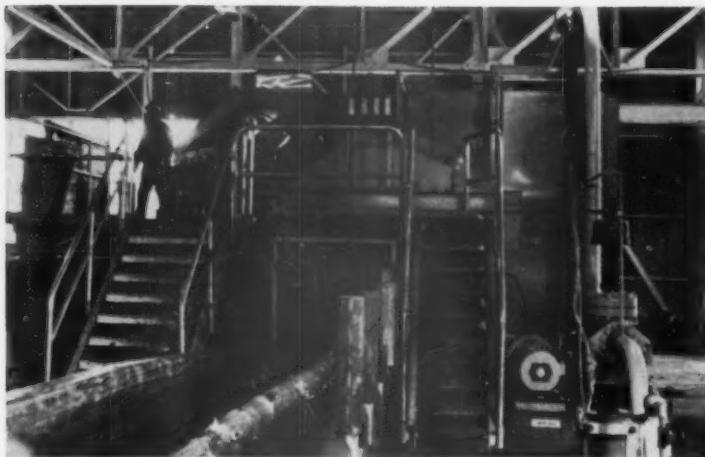
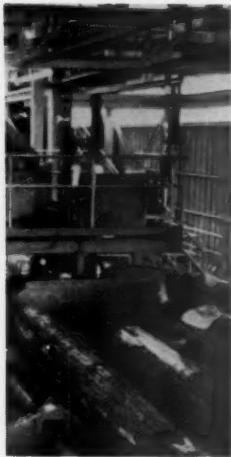


3 ONE HORIZONTAL-FEED Hansel chipper for each bark-er. The 112-in. unit in foreground processes smaller logs; 154-in. chipper (right rear) is largest horizontal chipper operating in British Columbia.



4 CHIPS GO from woodroom (left center) to silos by belt conveyor, emerge at bottom of silos via rotary feeders for screening enroute to digesters. If silos are full, arriving chips are conveyed over top of silos to downspout discharging directly to near end of outside storage or to vicinity of reclaim pit. Rader Pneumatics pressure system delivers reclaimed chips to silos or to back side of storage. Another R-P system brings chips in from sawmill, delivering either to storage or directly to woodroom-to-silos conveyor.

and Chips are Handled at Celgar



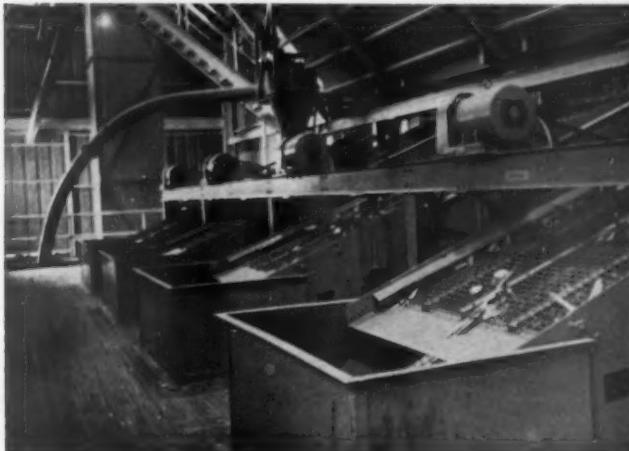
2 LARGE LOGS are debarked in 40-in. Hansel barker (at left); small ones in 30-in. Hansel unit (at right). Both hydraulic barkers use water at 1750-2000 psi for jetting bark from logs.



NEW WOOD SUPT. is G. Selvig, who recently transferred from Prince Rupert mill to Celgar. He directs all wood preparation activities.



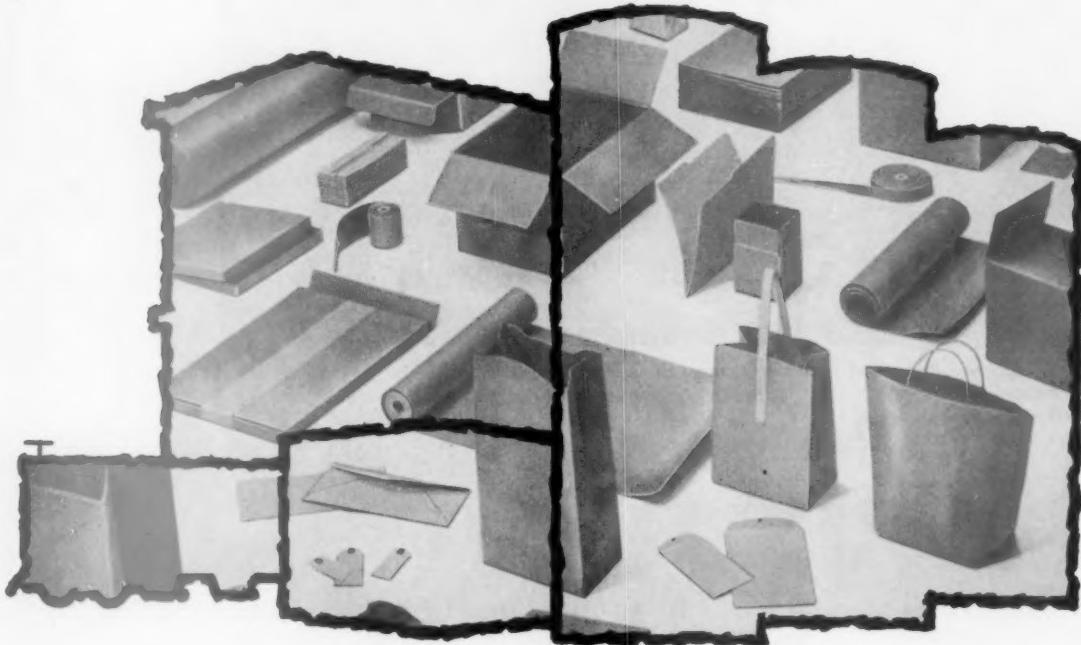
5 TO ASSURE CLEAN, uniform chips, Dillon screens are used for wood stored both in silos and in outside storage deck. Screens are located in woodroom on conveyor going from silos to digester.



WEST END



**OF EXPANDED SALT CAKE
PRODUCTION ANTICIPATES
INDUSTRY'S GROWING NEEDS**



 **WEST END** demonstrates its complete reliability as a major source by the continuing enlargement of its production facilities devoted to the manufacture of highest quality salt cake as a prime product. Independent of other product production and located at the site of vast natural raw material supply, West End is solidly qualified to handle the complete requirements of customers dependably, economically and efficiently.



WEST END CHEMICAL COMPANY • DIVISION OF STAUFFER CHEMICAL COMPANY
636 CALIFORNIA STREET, SAN FRANCISCO, CALIFORNIA • PLANT: WESTEND, CALIFORNIA



For large roll-storage areas, Cleveland Tramrail cab-operated cranes with full-power roll grabs are unexcelled for smooth operation and handling efficiency.

The unit illustrated handles rolls to 6000 lbs., diameters to 60 inches, lengths to 120 inches and to heights of 40 ft. and more. It turns them from vertical to horizontal position or vice versa. The entire floor area is utilized. Aisles are eliminated. Other Tramrail equipment also rotates rolls clockwise and counter-clockwise in horizontal plane.

HANDLE and STORE ROLLS with *Easy Rolling* Tramrail Cranes

For buildings with low ceilings, Cleveland Tramrail cranes provide a solution for efficiently handling rolls into and out of storage and to printing and processing machines. Even where there are many building-support columns, these cranes can be arranged to work around them.

Because Cleveland Tramrail cranes travel so easily, requiring only 15 lbs. starting effort and 10 lbs. running effort per ton moved, one man can quickly handle rolls unassisted. When the cranes are of the transfer type, he can transfer a load from one crane to another or to a fixed track system. This enables fast direct delivery between all points served by the overhead Tramrail equipment.

When rolls are handled by the overhead route, they can be passed over floor obstacles and delays eliminated. For the same reason, it is frequently possible to reduce aisleway widths and better utilize floor space. A great added advantage, not generally considered, is the large reduction in floor wear that is brought about when heavy roll handling is transferred from the floor to overhead Tramrail tracks that are of high carbon steel and can withstand the wear.

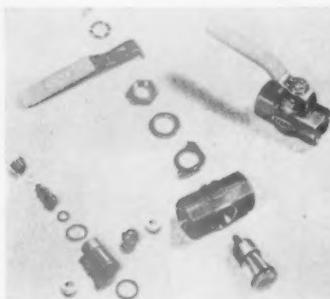
CLEVELAND  **TRAMRAIL**
Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 6731 E. 287 ST. • WICKLIFFE, OHIO

NEW EQUIPMENT

Ball valves

... have cartridge seating



Features: Special is the tapered cartridge which contains the entire seating assembly and which may be removed while the valve body remains in the line. Removal of a single retainer nut, requiring no special tools, permits the cartridge to be ejected from bottom of the valve body, it can then be cleaned or dismantled quickly.

Cartridge reassembly is simple since all parts are marked. Full interchangeability of parts makes maintenance simple and there are no shims, springs or other special adaptations required.

When the cartridge is replaced in the body, the tapered design positions it automatically and takeup on the retaining nut results in proper seating contact. O-ring seals on both stem and cartridge ensure proper closure and a Teflon thrust washer between stem and stem retainer absorbs shocks from line pressure, preventing displacement of the ball.

Handles of the new valves require only a quarter turn from full open to closed and are plastic-sheathed for insulation. Bright orange sheaths also serve to flag valve position, since the handle is parallel to the pipe line when the valve is open and stands out

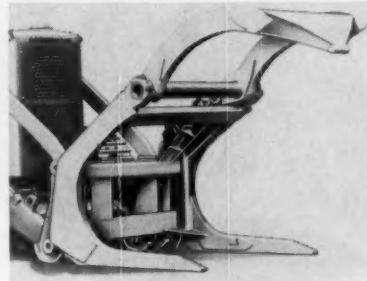
perpendicularly when closed.

Specifications: Designed for a wide range of applications, the ball valves are rated for pressures from vacuum to 800 psi, and for temperatures from -40 to 400 F. They are two-directional, with low operating torque and precision-machined, chrome-plated ball. Seats are Teflon with controlled pre-loading to maintain bottle-tight shutoff.

Supplier: Crane Co. Industrial Products Group, 4100 South Kedzie Ave., Chicago 32, Ill.

Pulpwood fork

... has low profile



Applications: New fork can load 16 ft. pulpwood, tree length pulpwood or sawn logs.

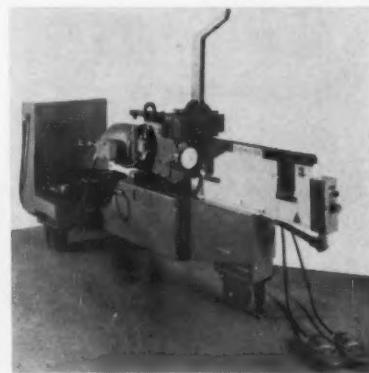
Features: The new low profile pulpwood fork permits the Traxcavator 977H Loader to handle 1.72 cords of 16 ft. logs averaging 4,500 lbs./cord. Design features include stop blocks that prevent bottoming of hydraulic cylinder pistons when clamp is brought to full-closed position. Clamp closure is 28.75 in., which allows fork to pick up tree length pulpwood and be held rigidly to prevent jacking.

Specifications: Tines are 64.25 in. long, give a clearance of 8 ft. 7 in. to tine tips at full dump position. Fork is also adaptable to the series D and E Cat 977 Loaders.

Supplier: Caterpillar Tractor Co., Peoria, Ill.

Power strapper

... is semi-automatic



Applications: For steel strapping of packages.

Features: The M20L semi-automatic power strapping machine has the same tensioning, sealing head and rugged structure as Signode's M20 PSM's, but differs from automatic models in having the lower strap chute.

The operator positions the package, steps on the feed switch, inserts the strap into the lower chute, and then steps on the cycle switch to tension and seal the strapping.

While similar in operation to the M2 models, the new unit has higher tension, faster feed, more rugged construction and unlimited strap takeup for higher production.

Specifications: Standard chute lengths are 18, 24 and 30 in. Vertical strap guides, which deflect the strapping over the package toward the operator, will clear packages 15, 21 and 27 in. high. A tension control wheel permits tension adjustment up to 1,500 lbs. A 3 hp, 1800 rpm, 3 phase, 60 cycle drip-proof motor is standard.

Supplier: Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill.

J. H. DUPASQUIER
560 E. Clarendon St.
Gladstone, Oregon

Increase Paper Production with

DUPASQUIER DRIPLESS STEAM SHOWER BOX

- Preheats the Web U. S. patent 2,838,982.
- Changes Water Viscosity
- **THUS FREEING WET MAT**
- Allowing Speed Increase
- Custom Built for Any Machine
Write for Illustrated Folder
- Canada Pat. 1955
Other pat. pgd.

Expanding sleeve

... for air shafts

Applications: For coreless roll and narrow core operations.

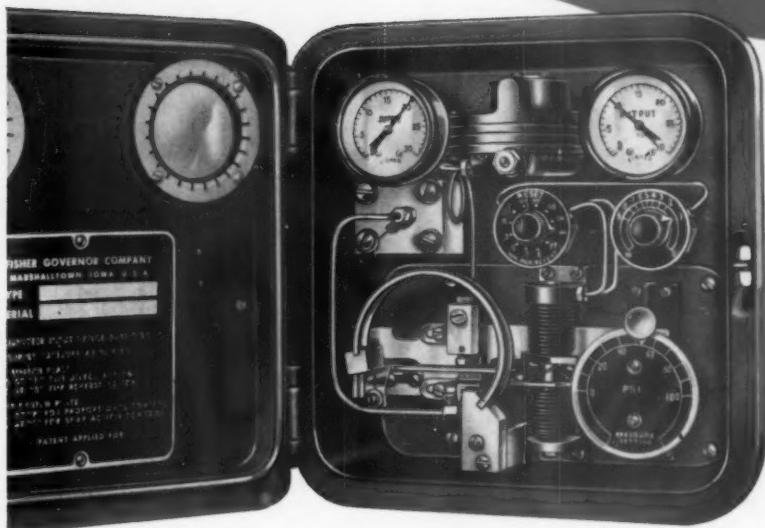
Features: Expanding sleeve is made of custom laminated fiberglass. Sleeve is designed to fit any size shaft and comes in wall thicknesses of $\frac{1}{4}$ to $\frac{1}{2}$ in., depending upon load capacity.

Lightweight sleeve has excellent

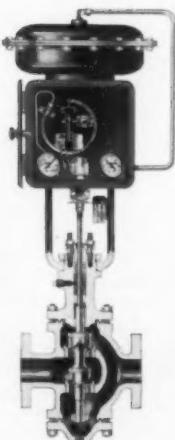


the Fisher/man shows how to get.....

**Accurate pressure control
in spite of demand changes**



**WIZARD II
Pressure Controller**



**WIZARD I
PRESSURE CONTROLLER**

The original Wizard I Pressure Controller is still available for those applications not requiring volume relay or reset features. The simplicity of a self-operated regulator and the accuracy of a pilot or relay operated regulator are found in the Series 4100U. This is, unquestionably, the reason for the continued popularity of the Wizard I series.

• Faster response to pressure changes provided by volume relay • Pin-point control made possible by reset feature, adjustable from .005 to 1 minute per repeat • Wide pressure ranges handled by brass, steel or stainless steel Bourdon tubes for 30 to 15,000 psi, Bellows assemblies for pressures below 30 psi and vacuum • Easily reversed from direct to reverse action without additional parts • Universal mounting on a wall, panel, or on yoke of control valve • Compact construction consists of two sub-assemblies encased in weatherproof die cast aluminum housing, either can be removed without disturbing case mounting. Write for bulletin No. D-4150B or D-4100 on Wizard I. Fisher Governor Company, Marshalltown, Iowa. Plants in Woodstock, Ont., Rochester, England. Butterfly Valve Division: Continental Equipment Co., Coraopolis, Pa.

*If it flows through pipe anywhere in the world
...chances are it's controlled by.....*

FISHER®
Controls
SINCE 1880

NEW EQUIPMENT . . .

springback action and is completely maintenance free.

Supplier: Nim-Cor, Inc., Nashua, N.H.

Suction box

. . . improves water removal

Application: For dandy rolls.

Features: Picking and porosity are prevented in making thin and superfine papers. Watermarks can be reproduced with better quality and clarity. Fibers are re-aligned by controlled in-

duction of water from the bottom side just before the nip of the sheet and dandy roll. Immediate removal of water after the sheet leaves the nip retains even fiber alignment for improved paper formation and watermark clarity.

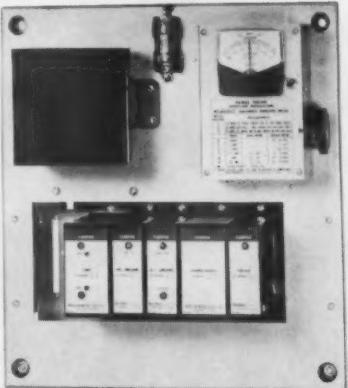
Specifications: All controls are on tending side of machine. Vacuum gauge is readable from tending side. Independent exhaust system is available or can be tied into existing vacuum system if capacity is sufficient. Unit is adjustable to varying sheet widths,

and is of bronze and copper construction.

Supplier: The Sinclair Co., Holyoke, Mass.

Solid state regulators

. . . for packaged drives



Applications: For variable speed drives.

Features: Using silicon controlled rectifiers and diodes in place of tubes, these new solid state devices, says the manufacturer, achieve precise motor control, 1/10% regulation at base speed, with response times up to twice as fast as tube-type regulators.

Heart of system is new "Cardpak" module, a complete pre-engineered control circuit, to amplify feedback signals. Transistors, capacitors and resistors are mounted on printed circuits. Each drive control system can be tailored to a specific job.

Silicon rectifiers, mounted on copper plates for heat radiation, operate over wide range of implant temperatures. No special air conditioning is needed. Complete regulator panel can be checked for start-up and trouble shooting by use of optional test fixture mounted on panel.

Specifications: Reliance V*S drives with these new regulators are available in 1 to 350 hp and are offered complete with Super "T" dc motors and various types of operator's stations.

Supplier: Reliance Electric & Engineering Co., Cleveland 17, Ohio.



FOR SIZE STABILITY...ORR FELTS

Dimensional accuracy is one reason so many paper-makers specify Orr felts. Another reason is the long service life built into these rugged, high quality felts. An Orr felt, engineered to your needs, will soon prove its worth. Why not check on it?

ORR FELT & BLANKET CO.

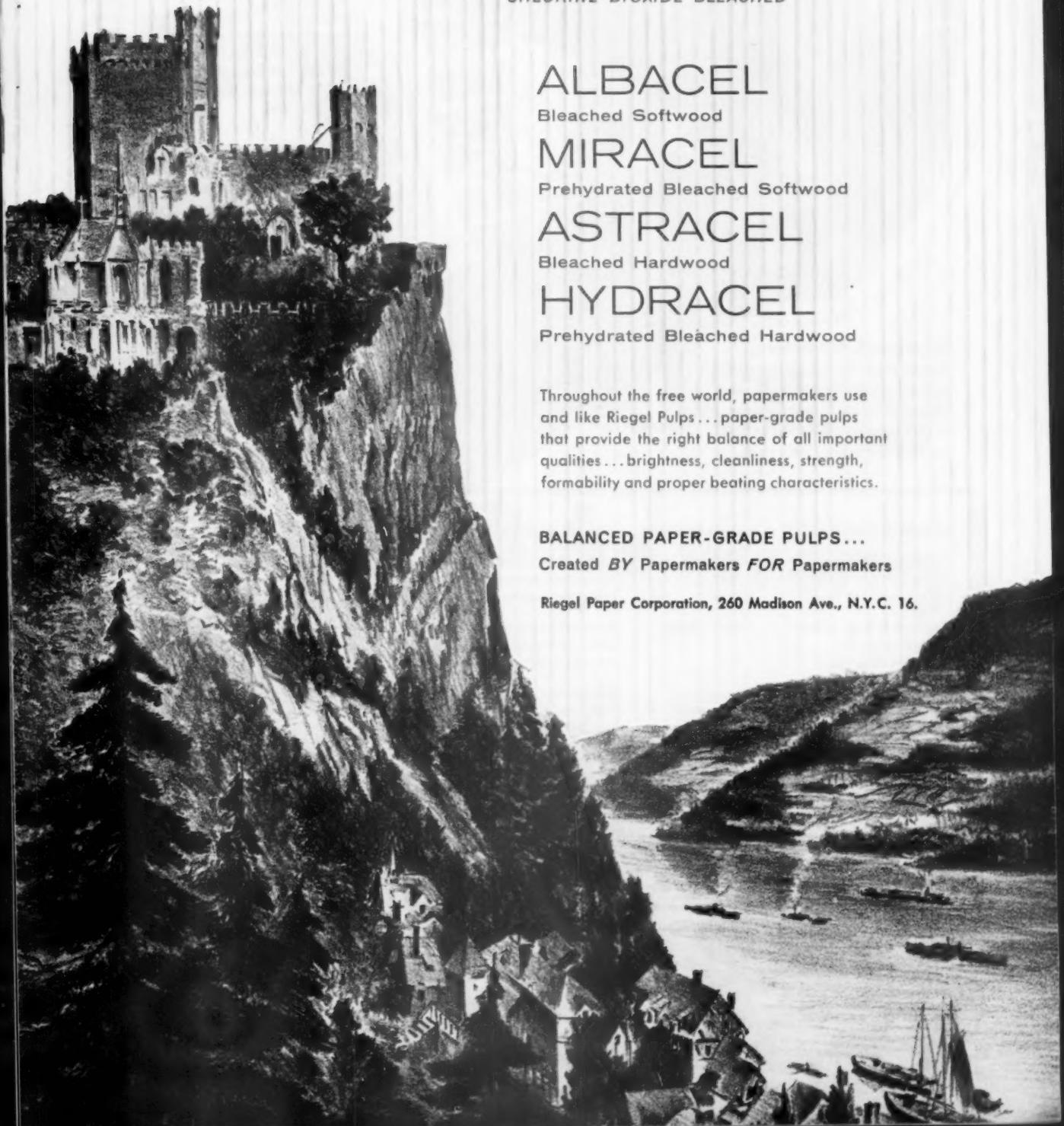
PIQUA, OHIO

Pumps

. . . for high-vacuum service

Applications: For vacuum processing and environmental systems.

Features: Pumps are two-impeller, dry-type units with impellers and seals especially suited to high-vacuum service. They have a wide operating range with an exceptionally flat pumping speed curve and "blank-off" below



In Germany as well as in the U. S. A. . . .

papermakers use and like

RIEGEL PULPS

CHLORINE DIOXIDE BLEACHED

ALBACEL

Bleached Softwood

MIRACEL

Prehydrated Bleached Softwood

ASTRACEL

Bleached Hardwood

HYDRACEL

Prehydrated Bleached Hardwood

Throughout the free world, papermakers use and like Riegel Pulps . . . paper-grade pulps that provide the right balance of all important qualities . . . brightness, cleanliness, strength, formability and proper beating characteristics.

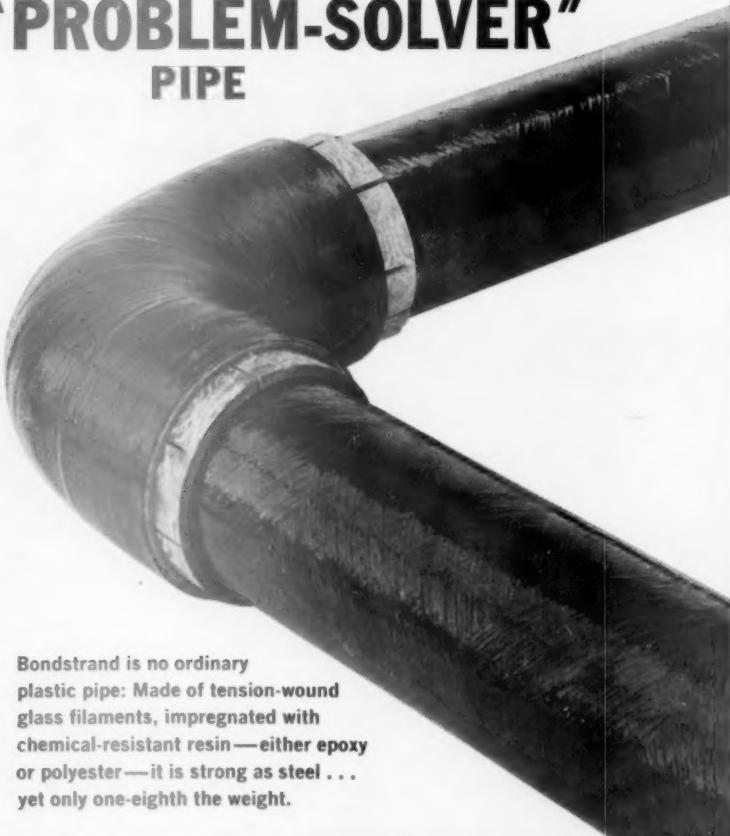
BALANCED PAPER-GRADE PULPS . . .

Created *BY* Papermakers *FOR* Papermakers

Riegel Paper Corporation, 260 Madison Ave., N.Y.C. 16.

BONDSTRAND®

THE
"PROBLEM-SOLVER"
PIPE



Bondstrand is no ordinary plastic pipe: Made of tension-wound glass filaments, impregnated with chemical-resistant resin—either epoxy or polyester—it is strong as steel . . . yet only one-eighth the weight.

THE PROBLEM

Carbon black slurry destroyed schedule 40 steel pipe in 30 days

Chlorine Dioxide water caused failure in stainless steel pipe

10% Ferric Chloride solution destroyed ordinary steel or stainless

Salt water well injection at 1600 psi

THE LOCATION

Synthetic Rubber Plant

Paper Plant

Sewage Treatment Plant

Petroleum Production

THE SOLUTION

Bondstrand installed 1959. No failure. Performance still rated excellent

Bondstrand installed 1958. Performance still rated excellent

Bondstrand installed 1958. Performance still rated excellent

Bondstrand installed 1958. No failure. Performance still rated excellent

Bondstrand's total installed cost can be actually competitive with ordinary carbon steel pipe. Write for bulletin containing physical and design data.



132B

Dept. FR 4809 Firestone Blvd.
South Gate, California

921 Pitner Ave.
Evanston, Ill.

360 Carnegie Ave.
Kenilworth, N.J.

111 Colgate
Buffalo, N.Y.

2404 Dennis St.
Jacksonville, Fla.

6530 Supply Row
Houston, Tex.

... NEW EQUIPMENT

0.5 microns Hg absolute pressure.

Pumps can safely handle high differential pressures which develop through peaks in pump-down or gas bursts which may result from some vacuum processes. Because there is no liquid seal or internal lubrication, there is no danger of bumping or backstreaming. Booster also effectively blocks backstreaming from an oil-sealed forepump.

Specifications: Pumps are available in 45 sizes for pressures from atmospheric to 0.5 micron Hg with pumping speeds to 35,000 cfm.

Supplier: Roots-Connersville Blower Div. of Dresser Industries, Inc., Connerville, Ind.

Sheet counter

... counts from top to bottom

Features: This improved model counts from the top of a 3½ ft. stack of paper on a skid down to the bottom sheet and at the same time tabs the paper at a programmed count. Fully mobile, the paper counter can be moved for fast, 100% accurate counting and tabbing of sheet paper on a skid.

Unit eliminates need for moving paper off the skid for 100% accurate counts. Count speed is rated at 300,000 sheets/8 hr. shift.

Specifications: Model Mark VI is designed nominally for larger sheet sizes than other models in the Vacumatic line of counters.

Supplier: Crosfield Electronics, Inc., 47 New York Ave., Westbury, New York.

Fractional hp reducer

... for torque arm line



Features: The new unit has a gear ratio of 25:1 and will transmit up to .95 hp at maximum intended output speed of 85 rpm. Predetermined combination of reducer and V-belt drive can provide any speed ratio up to 175:1.

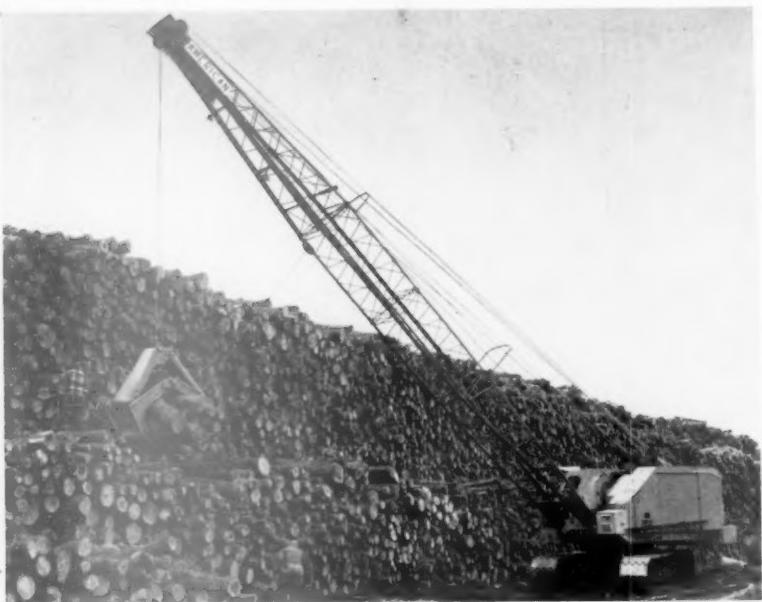
As a shaft-mounted reducer it is



PAPERMAKERS can't be wrong!

* To be exact 526 papermakers from more than 200 mills have attended Huyck Felt Workshops! Over 70% have come from companies sending additional representatives year after year — seasoned papermakers responsible for felt operation in mills throughout the industry.

P.S. Huyck's 1961 Workshops are fully enrolled.
Ask your Huyck Man about 1962.



Bought first AMERICAN in 1955 ...another in '58...another in '60

That, in a few words, tells the acceptance AMERICAN cranes have earned at this major Wisconsin mill.

The 700 Series crawler (above) decks truck-hauled pulpwood in ranks 35 feet high . . . unloads railroad gondolas . . . transfers seasoned pulpwood from ranks to railroad flats for transport to the mill.

The 830 locomotive crane (below) assists the crawler crane on pulpwood handling . . . also pinch-hits on various utility assignments including car switching and erecting work. Together, the two machines handle about 120,000 cords annually.

Newest of the three AMERICANS — a pedestal-mounted 200 Series

crane — was put into service just last year. Purpose of the pedestal-mount is to achieve high efficiency on "localized" job of transferring pulpwood from rail flats to hot pond. "A nice smooth unit," says the Asst. Plant Engineer.

It's another example how mills everywhere are showing their satisfaction with AMERICAN cranes thru repeat purchases. Remember, your AMERICAN representative can give you unbiased recommendations on crawler, rubber-mounted, locomotive, or special-purpose cranes for low-cost pulpwood handling. Call him in for a talk about your specific requirements. CC-738



AMERICAN
AMERICAN HOIST
and DERRICK COMPANY
ST. PAUL 7, MINNESOTA

... NEW EQUIPMENT

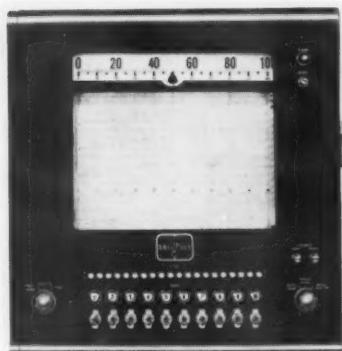
equipped with a torque arm for simple adjustment of V-belt drive center distance. Overload release is optional. As a flange-mounted reducer, it can be bolted directly to the driven machine or supporting structure.

Specifications: Standard TDO25 reducers are bored for mounting on 1½ in. shafts. Bushings can be furnished to adapt for smaller shafts. A special TDO25 bored for 1-3/16 in. is also available. The smaller reducer has semisteel housing to hold bearing seats in line for life of unit and has helical gears and pinions supported between Timken tapered roller bearings and ball bearings.

Supplier: Dodge Mfg. Corp., Mishawaka, Ind.

High speed scanner

... checks 200 points



Applications: For process control.

Features: The new 200 point transistorized alarm scanner is capable of scanning up to 200 measured variables at the rate of one point per second. On discovery of any "off-normal" situation, the instrument activates a recorder (which records the alarm condition measurement and reports its exact location), flashes a red alarm lamp and operates any desired external alarm system.

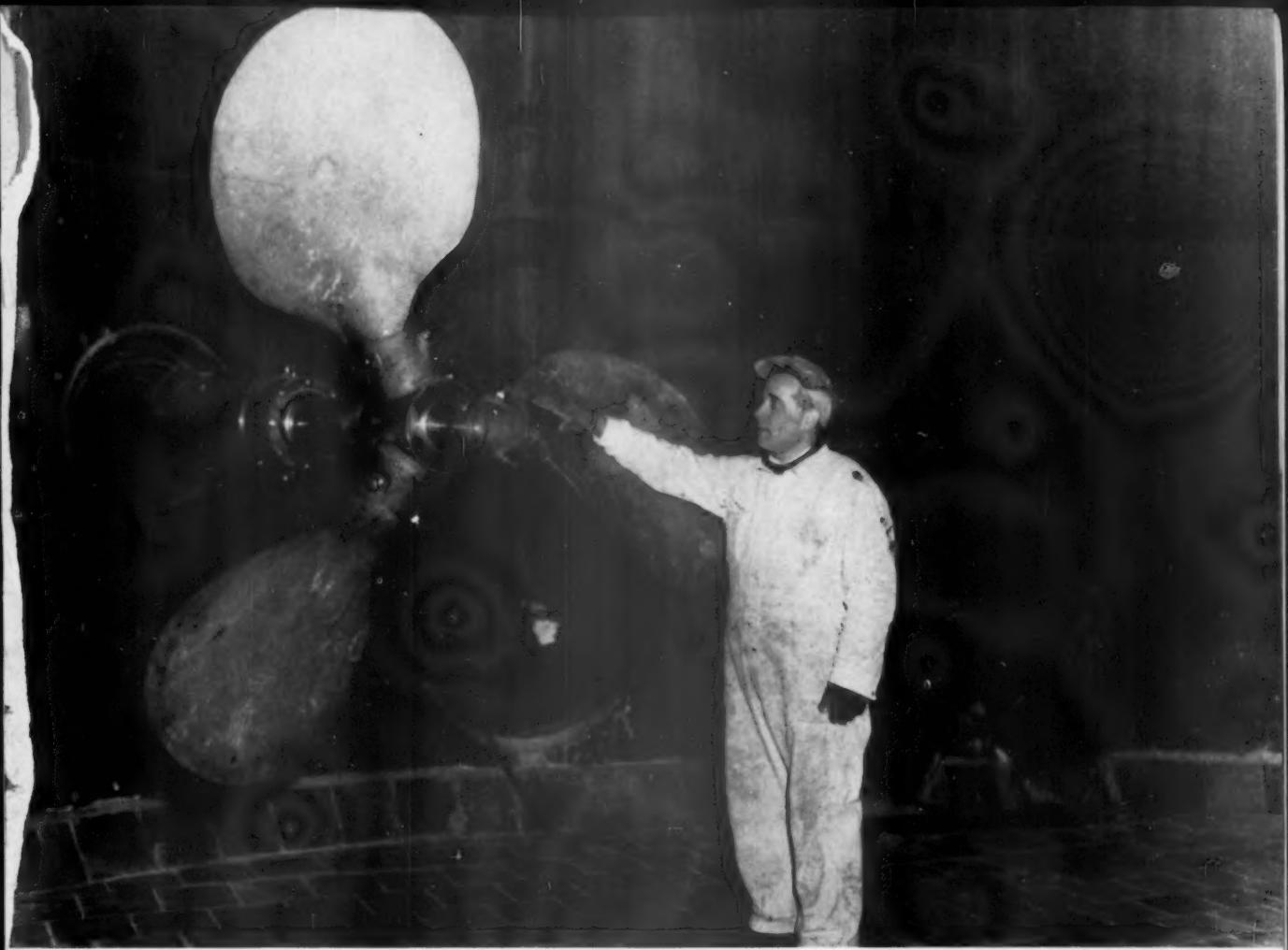
Upon completion of these functions, the instrument returns to normal scanning, leaving the alarm lamp "on" until a reset button is pushed.

Unit also features long life under continuous operation, quick alarm condition setting and indicated scan cycle.

A readily accessible potentiometer with screwdriver adjustment sets the alarm condition for 20 points at a time. Alarm condition for all 200 points is made quickly and easily.

Specifications: Scanner is available to customer specifications in multiples of 20 to a maximum of 200 points.

Supplier: The Bristol Co., Waterbury 20, Conn.



Photos courtesy Donnacora Paper Co. Ltd., Donnacora, Que.

This is where uniformity begins

When the man gets out, 200 tons of 5% groundwood stock come thundering in.

Then the seven-foot propeller starts delivering 300 horsepower to the bottom part of the stock, a zone 20 feet high and 37 feet in diameter. White water spurts from behind the prop to dilute the agitated stock to 3.5%.

Within the 20-foot-high agitated zone, grab samples taken at any instant differ from each other in consistency by no more than 0.1%. This blending capacity guarantees that significant fluctuations of consistency or freeness simply do not exist in the chest effluent.

Plenty of mills are getting this kind of "controlled zone uniformity" with LIGHTNIN Paper Stock Agitators. They're finding that it pays off in tighter control of stock consistency and freeness.

Results are fully predictable, unconditionally guaranteed. Your LIGHTNIN Mixer representative can give you the details. Look him up now in the yellow pages of your telephone directory. Or write directly to us.

Lightnin® Mixers

MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc., Mt. Read Blvd., Rochester 3, N.Y.

In Canada: Greay Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.

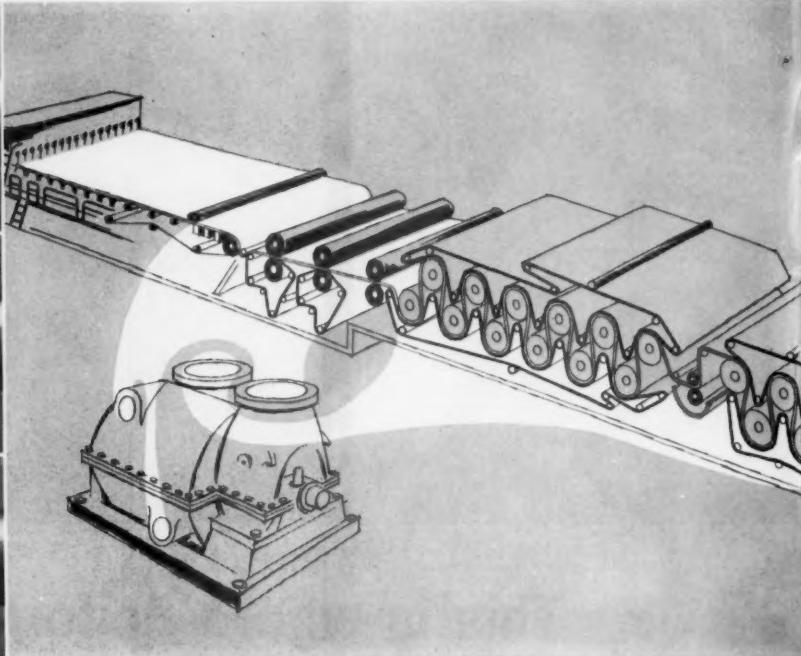
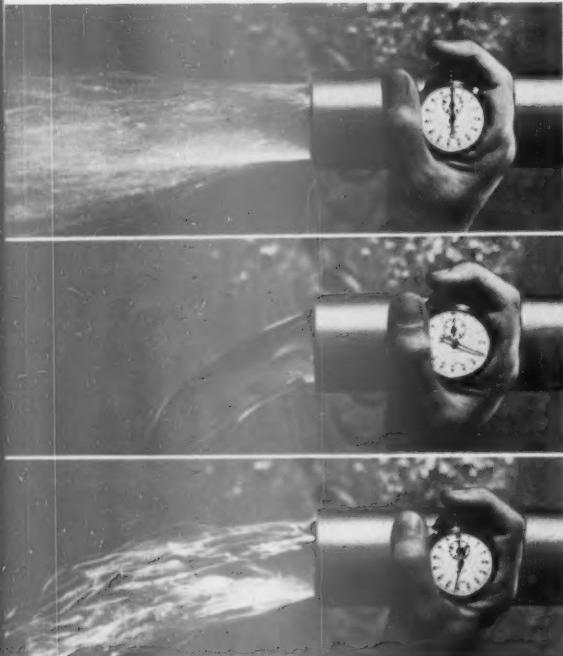
In Europe: Lightnin Mixers, Ltd., Poynton, Cheshire, England



HOW IT WORKS. Stock enters the upper part of 200-ton tank at 5% consistency for maximum storage. Consistency is let down to 3.5% in lower 37-foot-diameter section with low-pressure white water. The 20-foot-high bottom zone is kept in complete uniformity by one LIGHTNIN Side Entering Agitator. Upper portion of stock moves downward into blending zone in plug flow. There are no stagnant areas in the system. Tank provides steady feed, evening out variations in stock freeness. Tank effluent shows marked improvement over incoming stock. Paper machine operation is improved.



ideas and news:



ACAP pump regulates flow instantly . . . without valves or varying pump speed. Proven ACAP (Adjustable Capacity, Adjustable Pressure) principle with internal pneumatic control automatically matches flow to demand. Regulation of flow through changing impeller clearances eliminates binding, plugging, saves power, allows system to operate at high efficiency regardless of demand.

New VACU-THERM system inhales water, exhales hot air . . . The centrifugal exhauster used in this new system makes it uniquely superior to conventional vacuum systems for paper machines. This exhauster permits a large percentage of input energy to be reclaimed . . . heat of compression yields hot dry air for the paper-drying cycle. Constant pressure is maintained over a wide range of volumes and paper porosities. No make-up water required. Less floor space needed. And Allis-Chalmers engineers the complete system: controls, separators and exhauster.

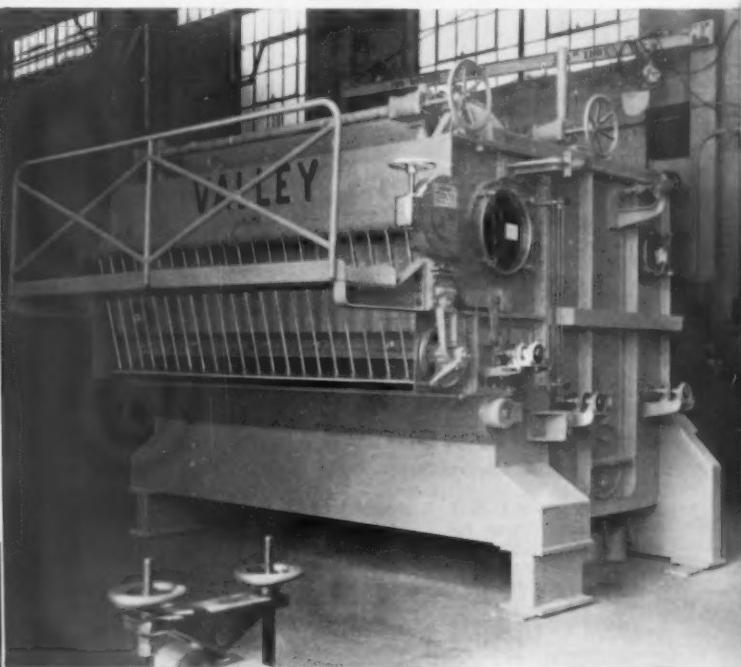
Which of these productive ideas could be working for you?

A pump that adjusts automatically. A valve that offers zero flow resistance. A vacuum system that produces usable heat. These examples demonstrate the extra value that is a standard with A-C... the greater efficiency and the added productivity which are yours when you buy A-C products, systems and services. Call your Allis-Chalmers representative for details on A-C "worth-more" features. Or write Allis-Chalmers, Industries Group, 903 South 70th Street, Milwaukee 1, Wisconsin.

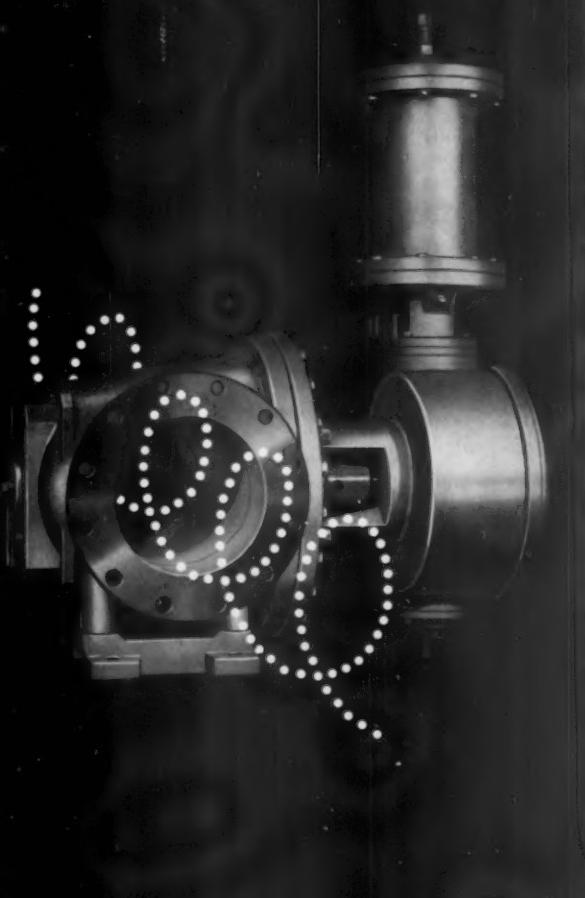


Water vandals turn into "weaklings" . . . with A-C deaerating hot process softener. At this plant scale and corrosion can't damage the boiler system. This one-two punch hot process softener and deaerator combination prevents hardness and silica salts from causing dangerous scale deposits in the boilers. Oxygen and corrosive gases are eliminated when water passes through the stainless steel deaerator section with its unique counterflow design thoroughly scrubbing dissolved gases from the water. Result: Harmful contaminants never reach the boiler-steam system equipment.

"On-the-fly" adjustability . . . speeds production, ends costly machine shutdowns. New — from Valley Iron Works Corporation, an Allis-Chalmers subsidiary — a headbox that allows you to change from velocity formation to pressure formation, control turbulence . . . all "on-the-fly." Offers pressure and vacuum loading, both adjustable during operation.



"Open road" for unrestricted flow . . . This ROTOVALVE, when wide open, offers no greater resistance to flow than a straight pipe of equivalent length. Promotes lower pumping costs. Actually seats itself tighter with use. And special shutoff characteristics reduce water hammer. All moving parts are totally enclosed, yet easily accessible.



ALLIS-CHALMERS PRODUCTS FOR THE PAPER INDUSTRY: Look to Allis-Chalmers for compressors; controls; earth-moving equipment; industrial systems; lift trucks; motors; paper-making machinery; pumps; rectifiers; electrical generation and distribution equipment; tractors; transformers; unit substations; valves; water-conditioning equipment.

ALLIS-CHALMERS

STRICTLY PERSONAL...

starts on p. 35 . . . Co.; William Twisdale, vice chairman, Gould Paper Co.; William Martin, secretary, Stebbins Engineering & Mfg. Co.; Mike Durkee, treasurer, Knowlton Brothers.

James L. McAndie, who has been development engineer for Morden Machines Co. at Portland, Ore., transfers to West Acton, Mass. as Northeastern sales engineer.

New officers for 1961-62 season for Empire State Section, Eastern District of TAPPI are **Gordon Rabeler**, chairman, International Paper Co.; **Warren Lamke**, vice chairman, IP; **Guenter Herwig**, secretary, Finch, Pruyn & Co.; **William Montgomery**, treas., Finch, Pruyn; **John Williams**, program, Sandy Hill Iron & Brass Works; **Charles Hurley**, entertainment, Scott Paper Co.; **Hughes Gemmill**, membership, W. & W. E. Gurley; **Jack**

Sheldon, publicity, Trimbley Machines Works; Richard Hurley, education chairman, West Virginia Pulp and Paper Co.; and George Forsyth, junior awards, Nalco Chemical Co.



Claude A. Raby steps up as divisional mgr., sales, J. M. Huber Corp. paper clays and pigments. He succeeds **Robert J. Casey** who has resigned.



Albert Oetkin has been promoted to asst. manager of International Paper Co.'s Hudson River mill at Corinth, N.Y. The RPI graduate was previously general supt.

David J. Kraske has been promoted to coating supt. at Oxford Paper Co.'s. Lawrence, Mass. mill . . . **Morton J. Harris** is now general mgr., Utica Div., DoeSkin Products, Inc., succeeding **Howard Rowan**, who has joined Steiner Tissue Mill of Albany, N.Y., in a similar post . . .



Eugene P. Alexander is manager of multiwall bag division, Chase Bag Co. and will headquartered in New York City. He joined Chase in 1948, was sales mgr., multiwall bag division.

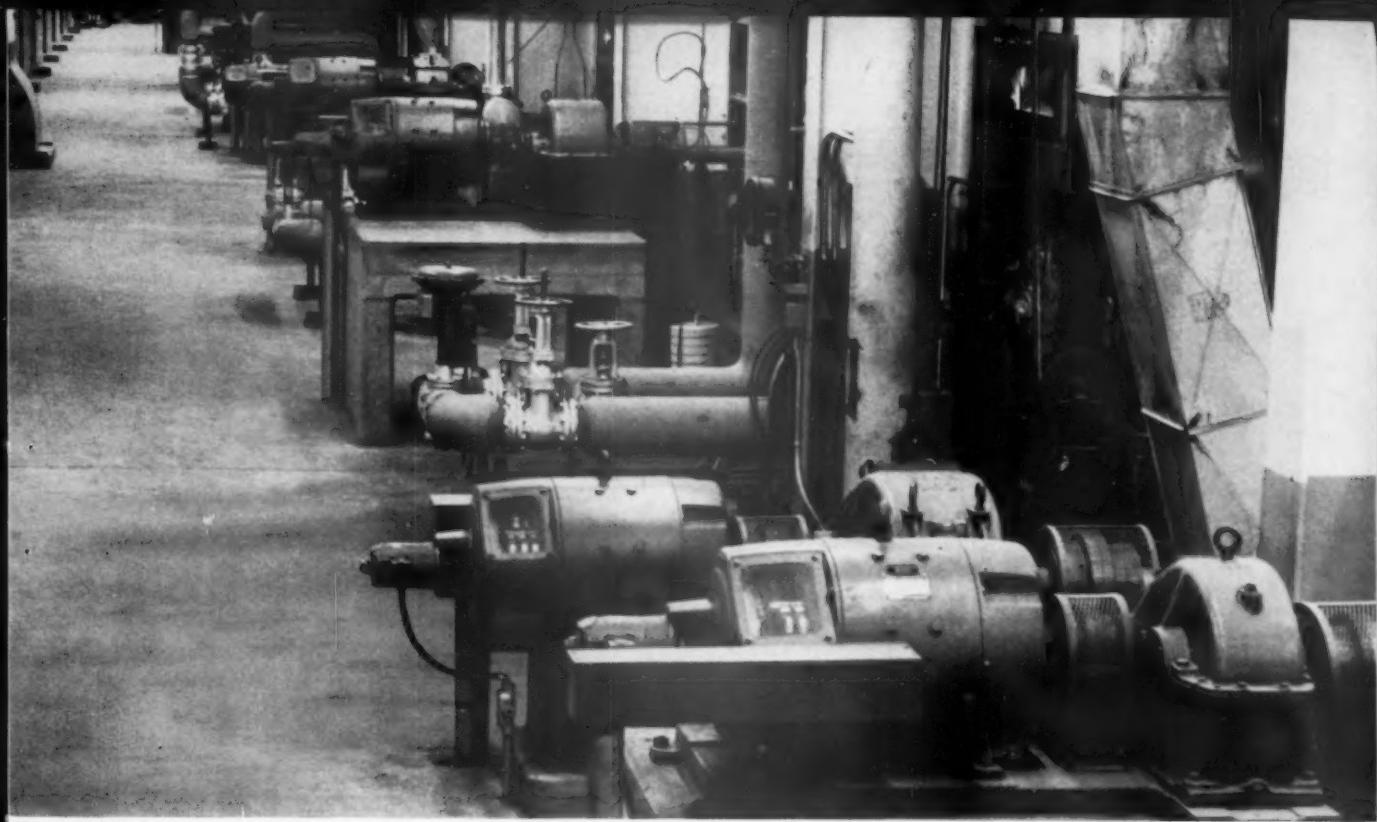


J. Robert Potter is now president and treas., Lockwood Greene Engineers, Inc. **William J. Heiser**; moves up to chairman, succeeding **Samuel B. Lincoln**, director and honorary chairman.

Midwest

Arthur Aschenbrenner and **Robert Vogel** have been named sales representatives in Consolidated Water Power & Paper Co.'s paperboard products division. They will serve in the Milwaukee and Chicago areas, respectively. Mr. Aschenbrenner had been . . . turn to p. 98





HOW WESTERN GEAR SERVES THE PAPER INDUSTRY

PULP MILL DOUBLES PRODUCTION... CHOSES WESTERN GEAR REDUCERS AGAIN

Tooling up for doubled production, the Georgia-Pacific Paper Company's mill at Toledo, Oregon, is now using 25 Western Gear SpeedMaster® reducers in the number-two paper machine and attendant facilities at its newly expanded 600-ton per day Kraft mill. Georgia-Pacific Paper Company is part of one of the largest and most progressive forest products companies in the nation. SpeedMaster reducers were again specified for this modern two-machine mill to insure the fastest, most efficient mill operation possible. Eleven SpeedMaster reducers power the various sections of the paper machine, from the wet end to the reel. These include couch drive, wire turning roll drive, first press, second press, first dryer, breaker stack, bottom roll, second dryer, size press stationary roll, third dryer, calendar and reel. More Western Gear SpeedMaster reducers are in use in Pacific Northwest lumber and pulp mills than any other brand. A reputation of quality since 1888 has made them the standard drive of the industry. Give your mill the benefit of Western Gear leadership. For full information, write, wire or phone: Western Gear Corporation, Industrial Products Division, P.O. Box 126, Belmont, California. LYtel 3-7611.

*Registered Trademark

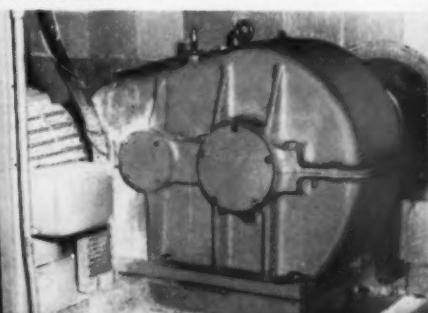
on the long run... QUALITY COSTS YOU LESS!



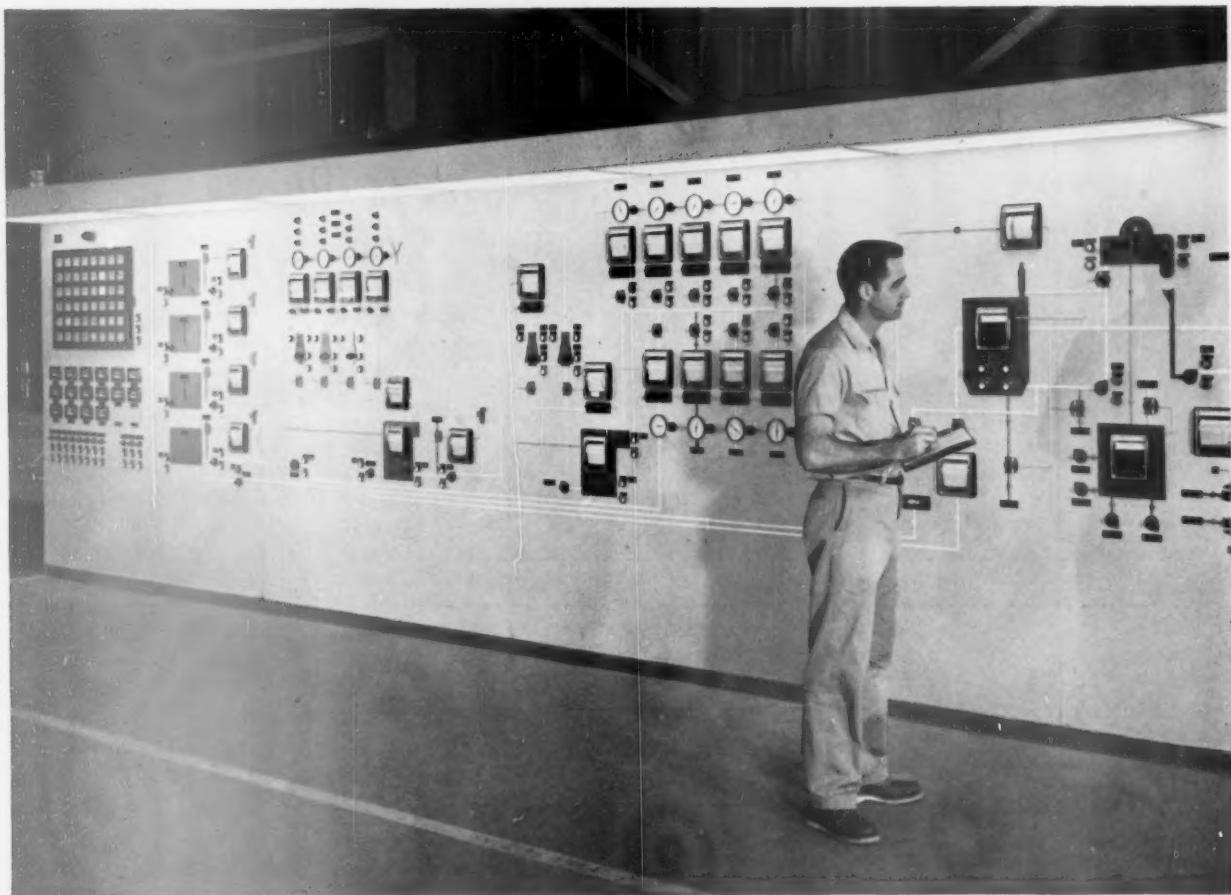
COPYRIGHT 1961 WESTERN GEAR CORPORATION

SpeedMaster S63 parallel shaft reducer driving flat box vacuum pump.

Couch pit agitator driven through a Western Gear Speed-Master D56 parallel shaft reducer.

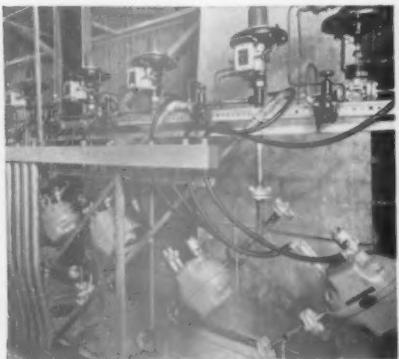


Marathon Southern Using on New Board Machine

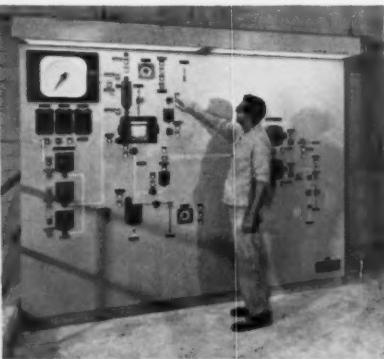


FOXBORO STOCK BLENDING PANEL automatically proportions 3 stocks, 2 dyes, and 10 different additives. Machine tender just sets dials and walks

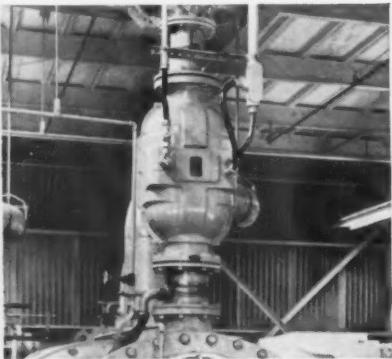
away. Foxboro does the rest—even readjusting flow rates to meet changes in machine demand, while holding proportions constant.



FOXBORO $\frac{1}{2}$ -inch and 1-inch Magnetic Flow Meters control flow of dyes and additives to various chests. Meters have no flow restrictions—never foul or plug up.

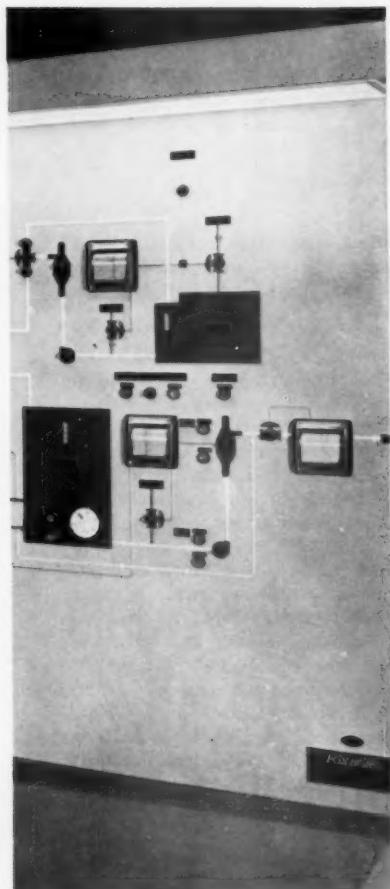


FOXBORO TRAILING-BLADE COATING MAKE-UP CONTROL PANEL automatically controls weighing, mixing, and blending of coating materials in accordance with pre-determined ratios.



8" FOXBORO MAGNETIC FLOW METERS keep continuous check of flow of stock from intermediate Clafin Refiners. If flow is excessive, warning lights on control panel attract operator's attention.

Foxboro Control at Naheola, Alabama



Foxboro engineering provides finger-tip control in new expansion project

Marathon Southern Corporation's new board machine is believed to be the most completely automated in the industry. Stock preparation, dry-end control, suction-box vacuum control, trailing-blade make-up, size press coating make-up — all are controlled by individual Foxboro graphic control panels throughout the mill.

The total instrument installation was

designed to pay for itself in short order through precise control and reduction of production errors.

Complete mill, or single process, Foxboro instrumentation can help you make paper and board more efficiently, at lower cost. Ask your nearby Foxboro Field Engineer for details.

The Foxboro Company, 996 Neponset Avenue, Foxboro, Massachusetts.

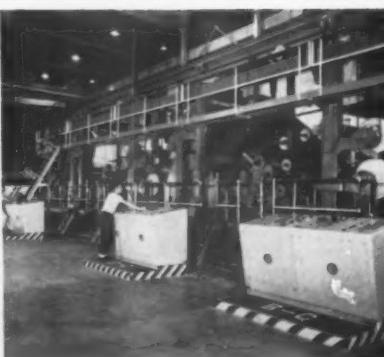
FOXBORO

REG. U. S. PAT. OFF.

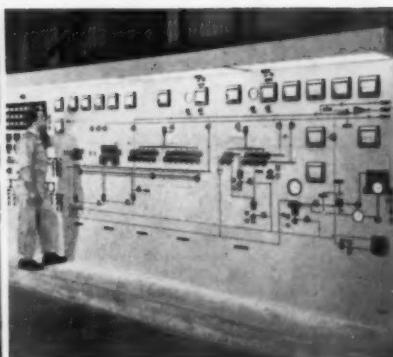


FOXBORO WET-END CONTROL PANEL. Small-case Consotrol* instruments, and graphic panel techniques were used throughout the mill. Marathon reports them a great benefit in training operating personnel.

*Reg. U.S. Pat. Off.



PAPER MACHINE CONSOLES provide operators finger-tip control over their mammoth board machine. Machine was designed and built by Black-Clawson Company. Start-up was smooth according to Marathon officials.



FOXBORO DRY-END CONTROL PANEL. All instrument systems were designed with Foxboro engineers, working in close cooperation with Marathon's contracting engineers, Rust Engineering of Pittsburgh.

STRICTLY PERSONAL . . .

starts on p. 94 . . . with Evert Container Corp., and Mr. Vogel with C. W. Zumbiel Co. . . . David Middleton has joined Consolidated's engineering department. He is a U. of Wisconsin mechanical engineering graduate. . . . Jaro Holý has been appointed mgr. of chemical sales in Consolidated's Appleton Div. Dennis Wilch has been named product development chemist for the division, and G. Kent Dickerman, project chemist. . . . Richard D. Fieting has joined Consolidated's Wisconsin Rapids division as a quality control engineer in its technical dept.

Donald Libby of Continental Can Co., has transferred from Manistee, Mich., to Augusta, Ga., to be manager of customer service at the new mill there.

Eric G. Erickson has been promoted to general sales mgr. for disposable plates and "Foodtainer" trays in Diamond National Corp.'s Molded-Packaging Div. George S. Wolf becomes divisional vice president and general sales mgr. for egg packaging; John J. Penn, director of manufacturing for the division; Donald A. Hunter, assistant director of manufacturing; and James L. Horton, manager of

Diamond's molded-packaging plant at Red Bluff, Calif. . . . Forest R. Johnson with Instrument Development Laboratories, Inc., Attleboro, Mass., since 1957, is its new regional sales mgr. in the Ohio Valley region.



Zane L. Anderson is national sales mgr., Pulp, Paper and Allied Products, of Economics Laboratory, Inc. He had been chief supt. of works in progress for Walter Butler Co., St. Paul.

Edwin J. Sutphin, formerly with Robt. Gair Paper Div. of Continental Can Co., is now asst. project manager for Beloit Iron Works in Beloit, Wis.

Earl G. Frahm is now vice president and controller of the Gummed Products Co. Div. of St. Regis Paper Co. Mr. Frahm has held the posts of controller, assistant to the general mgr., and secretary. . . . Other appointments in the division: Howard L. Heise, research director since 1957, to vice president in charge of research; Frank A. Winninger, formerly assistant sales mgr., to sales mgr.; Robert A. Havemann, former mgr. of the Gummed Printing Paper Div., to assistant sales mgr. . . . George A. Waters, who had been sales mgr. of St. Regis' Cleveland Corrugated Box Div., becomes general mgr. C. William Newman succeeds Mr. Waters as sales mgr.



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You'll use minimum power
You'll need less maintenance
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Kalamazoo "Side Hill" Washer

These practical slide washers give a better and more effective wash job than other washing methods. They may also be used as thickeners and savealls. These units are designed by Kalamazoo engineers—experts in serving the paper industry for more than 90 years. Our experience enables us to completely prefabricate

the units of top quality materials. Installation supervision can be furnished. Laboratory size units are available for experimental purposes in determining the proper angle and screen mesh. Write today for information on capacities and cost estimates.

WOOD TANK DIVISION

Kalamazoo TANK & SILO CO.

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KALAMAZOO, MICH.

Clarence H. Hornsby, Jr., has been appointed groundwood supt. at Bowaters Carolina Corp.'s Catawba, S.C., mill. He was formerly with International Paper Co. at Pine Bluff, Ark.

South

Richard L. Boll is sales engineer serving paper mills in Southwest for Bolton-Emerson. He holds a master's degree in engineering from George Washington U., has completed studies for doctorate.



L. A. (Tommy) Thompson, a familiar figure in the Southern paper industry for 25 years, has retired . . . turn to p. 102



make
cleaner paper
with
NOPCO® DEFOAMERS
backed by
Nopco know-how

One of the causes of a bad run of paper can be foam. Bubbles that carry fiber, size or color on their surface burst and leave light spots. Those that carry filler or dye leave dark spots. Either way, the sheet won't pass inspection.

Many variables contribute to foam formation. Since each mill has its own distinct foaming problems—because of differences in equipment, type of water, chemicals used and running speeds—it takes a wide range of defoamers to meet them all. Let your Nopco specialist work with you to develop the best system for your conditions. Write for specific information and for literature.



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• Richmond, Va. • MEXICO: Mexico, D. F. • CANADA: Brantford, Ont. • Granby, Quebec



Here's a helpful, informative folder—yours for the asking. Tells all about Sonoco paper mill cores, Sonoco metal ends and paper mill core machinery. It's loaded with size charts, illustrations and technical data. Order your file copy today!

Sonoco's 60 years' experience is coupled with research and a completely integrated manufacturing operation to produce the high quality, dependable cores of today. They are made to exacting torque and crush strength specifications. Non-returnable cores; in all sizes. Returnable cores, with or without famous Sonoco metal ends, are made in all standard sizes.

Regardless of your core needs, you'll get more for your core dollar from Sonoco in service, quality and economy.



SONOCO PRODUCTS COMPANY
Hartsville, South Carolina

Please send me the free descriptive folder on Sonoco paper mill cores.

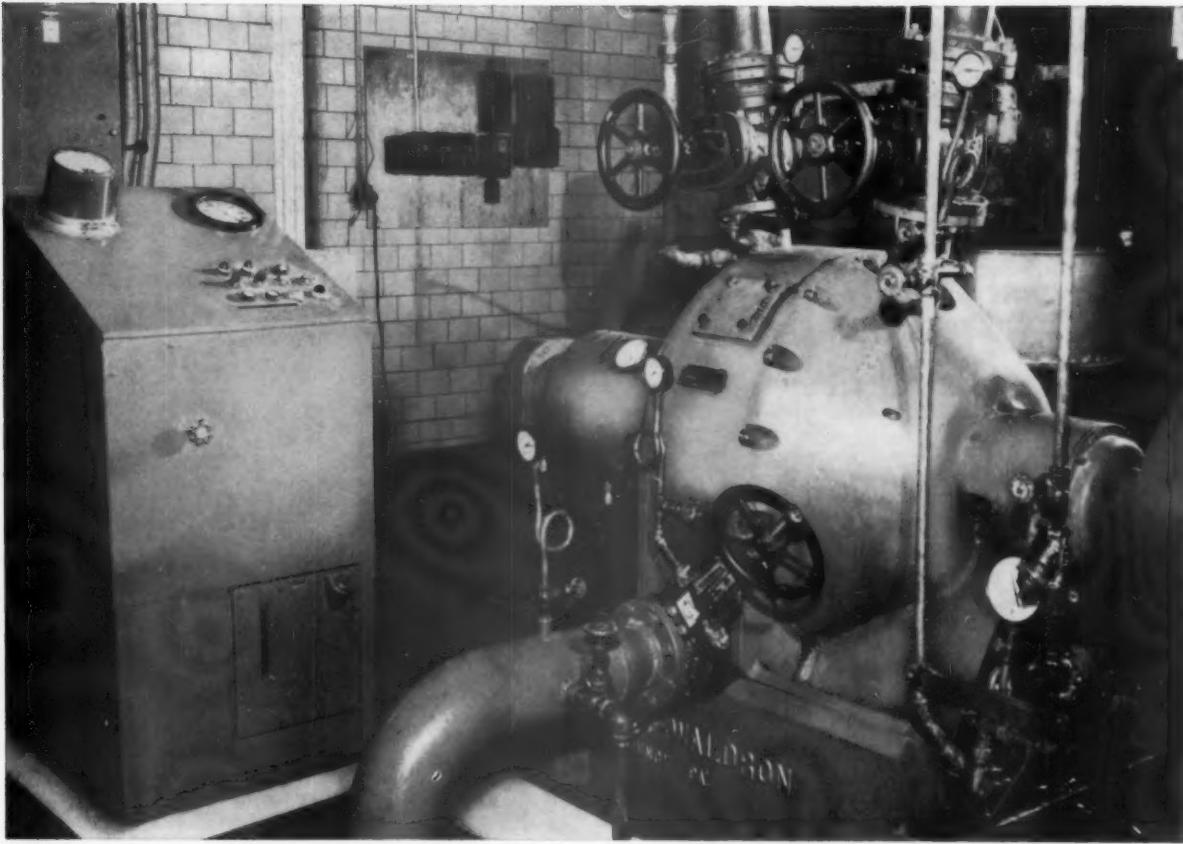
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gives twice the normal capacity in a single unit

At CCA, Sprout-Waldron's Pressurized Refiner gives *twice the normal capacity in a single unit*. The parallel feed arrangement serves twin refining surfaces, providing twice the capacity of single disc units of equal disc diameter.

Superior quality control results from the unique FLOATING ROTOR which allows you to change throughput or capacity with the sim-

ple adjustment of the stock flow control valve at the refiner discharge.

Tedious, time consuming refiner readjustments are virtually eliminated since pumping action of the Sprout Pressurized Refiner gives the same approximate "unit work" with changes in throughput. This is not the case with single disc pressurized refiners where the entire back of the refining disc is subjected to the

refiner discharge pressure which results in an increase or decrease in "unit work" with a decrease or increase in refiner throughput.

If you are looking for mechanical simplicity, high production and uniform quality *plus* low operating and maintenance costs, get the facts on Sprout-Waldron 20", 26", 34" and 42" Pressurized Refiners. Bulletins are available upon request.

SPROUT, WALDRON & CO., INC.

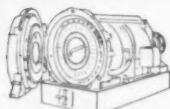
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Refiners • Conveyors • Feeders • Screens • Mixers • Drainers • Stock Proportioners

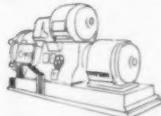
609



MORE SPROUT DISC REFINERS ARE SOLD THAN ANY OTHER MAKE



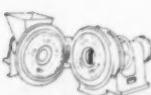
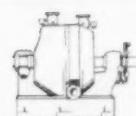
36-1 • REFINERS • 36-2



DOUBLE DISC REFINERS



20"-25" • PRESSURIZED REFINERS • 34"-42"



LABORATORY REFINERS

STRICTLY PERSONAL . . .

starts on p. 98 . . . from the Hercules Powder Co. He began his southern career in 1937 in New Orleans and moved to Atlanta in 1947. He was serving as special representative for Hercules at the time of his retirement. . . . W. Andy King has been appointed Clinton Corn Processing Co. representative in South Carolina area, working under Southern division mgr. C. F. Cline, Jr.

W. Perry (Pete) Brown, formerly director of industrial relations for the Gardner division of Diamond National

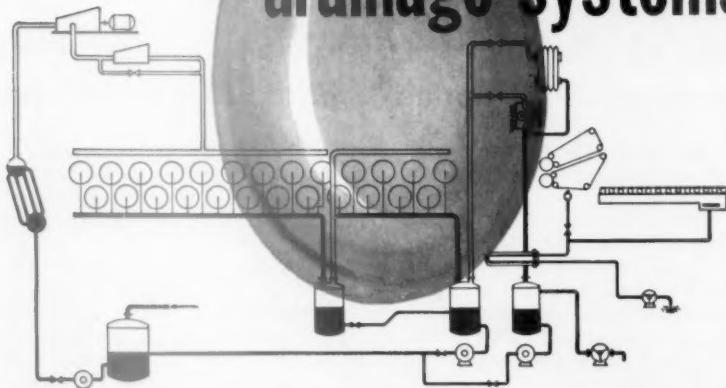
Corp., is now staff asst. to the corporate director of industrial relations of Hudson Pulp and Paper Corp. He is assigned to Hudson's Palatka, Fla., operations.

gree from Institute of Paper Chemistry in 1948, was affiliated with Union Bag & Paper Corp. at Savannah 3 yrs. prior to joining Weyerhaeuser, is now chmn. Pac. Section TAPPI . . . Wesley H. Anderson is promoted from screen tender to screen room supervisor at Scott Paper's Everett, Wash. plant to succeed Louis Bartruff who retired after 30 yrs. service at this mill.

Pacific

Curtis S. Walseth, tech. director of Grays Harbor branch, Weyerhaeuser Co. since 1956, is named assoc. res. dir. of the company's pulp & paperboard div., Longview, Wash. He obtained phd de-

ELIMINATE DRYER CONDENSATE PROBLEMS with **RMF** dryer drainage systems



- Increase Dryer Capacity
- Higher Production
- More Uniform Drying
- Prevent Reject Sheet

Our Dryer Drainage Systems will effectively eliminate your water condensate problems. Drying capacity is substantially increased and you get more effective drying at lower temperatures. In addition, RMF Systems result in more uniform drying across the sheet, assuring automatically graduated dryer temperatures. This lessens shrinkage, cracking, curling, wet streaks and hardening.

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Belz

Boylon

F. O. Boylon, vice pres.-manufacturing, Crown Zellerbach Corp., presents 45 yr. service award to Lonnie Belz, grinder foreman, at CZ Camas (Wash.) Div. senior service dinner where 53 employees received pins denoting 1690 yrs. company service.

Russell M. Cook, gen. mgr. of Col. Riv. Paper Co. converting dept., Vancouver, Wash., moves to L.A. as tech. svc. repr., a new position. He'll offer service to buyers and users of CRP products.



Ralph R. Clark, Jr., moves to Western div. in San Francisco for the Fuller Co. and will handle direct customer sales and service. He was previously at Catawauqua, Pa.



Canada

Roy H. Thomson, chairman of the board, Thomson Newspapers and one of the fastest rising newspaper magnates in the United Kingdom as well as in his native Canada, has joined the board of Abitibi Power & Paper Co.

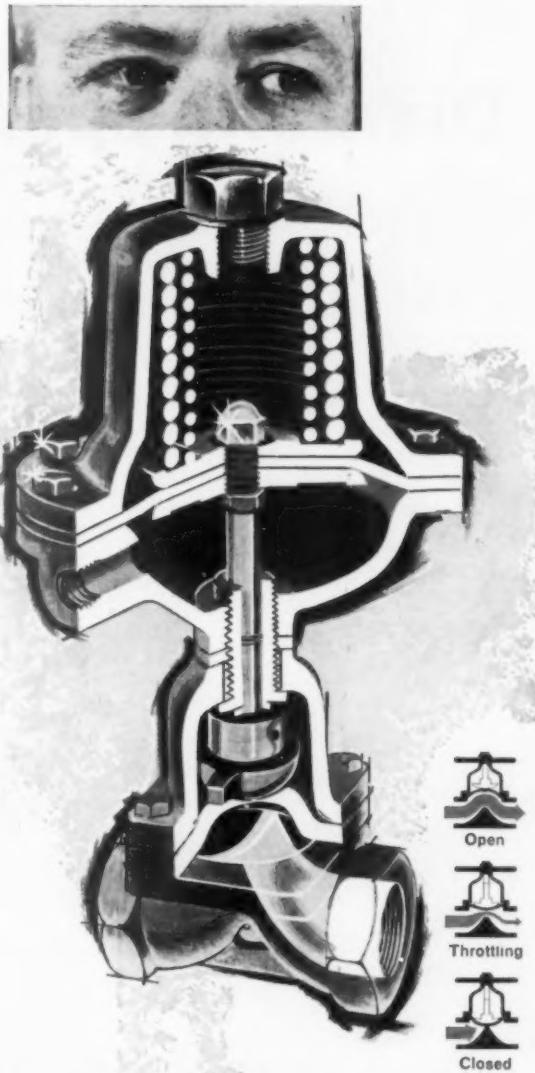
W. H. Aird, vice pres., sales, Howard Smith Paper Mills, says he is convinced the company will not lose its distinctive character as a result . . . turn to p. 106

You can see the sense to
HILLS-McCANNA
Air-Operated
Diaphragm Valve
Design

Here is **economy...simplicity...reliability...accuracy** for automatic and remote flow control service.

- WIDE RANGE OF OPERATOR SIZES—no need to buy more operator than needed for a given size valve.
- DRIPTIGHT SHUTOFF—will close tightly even against solid particles on seat.
- ACCURATELY CONTROLLED THROTTLING—valves available with tell-tale travel stops, limit stops, and positioning devices for consistently repeatable control accuracy.
- TYPES FOR EVERY JOB—air open—air close, air open—spring close, and spring open—air close types.
- WORKING PARTS completely isolated from flow.
- BODY AND DIAPHRAGM MATERIALS to handle paper pulp, acids, alkalies, oils, foods, beverages, fats, slurries, semi-solids, viscous materials, compressed air, gases, volatiles, atomic reactor wastes, fuels, and hundreds of other fluids.
- 1/2" THROUGH 16" valve sizes—with screwed, flanged, socket weld, and special end connections—for pressures to 150 psig and temperatures to 400°F.

ASK FOR NEW BULLETIN NO. 134-A giving complete selection data. Write for your copy today or call your nearby Hills-McCanna distributor.



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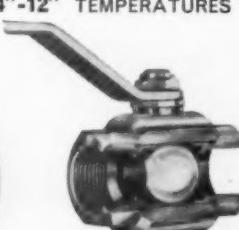
What these valves
really control
is cost!

DV61-1

BALL VALVES—1/4"-12" TEMPERATURES TO 1000°F



McCannaseal top-entry valves for easy in-line maintenance.



McCannaflo valves—simple, compact, economical.



Air-operated valves—in all types and sizes.

Diamond spent \$millions to cut



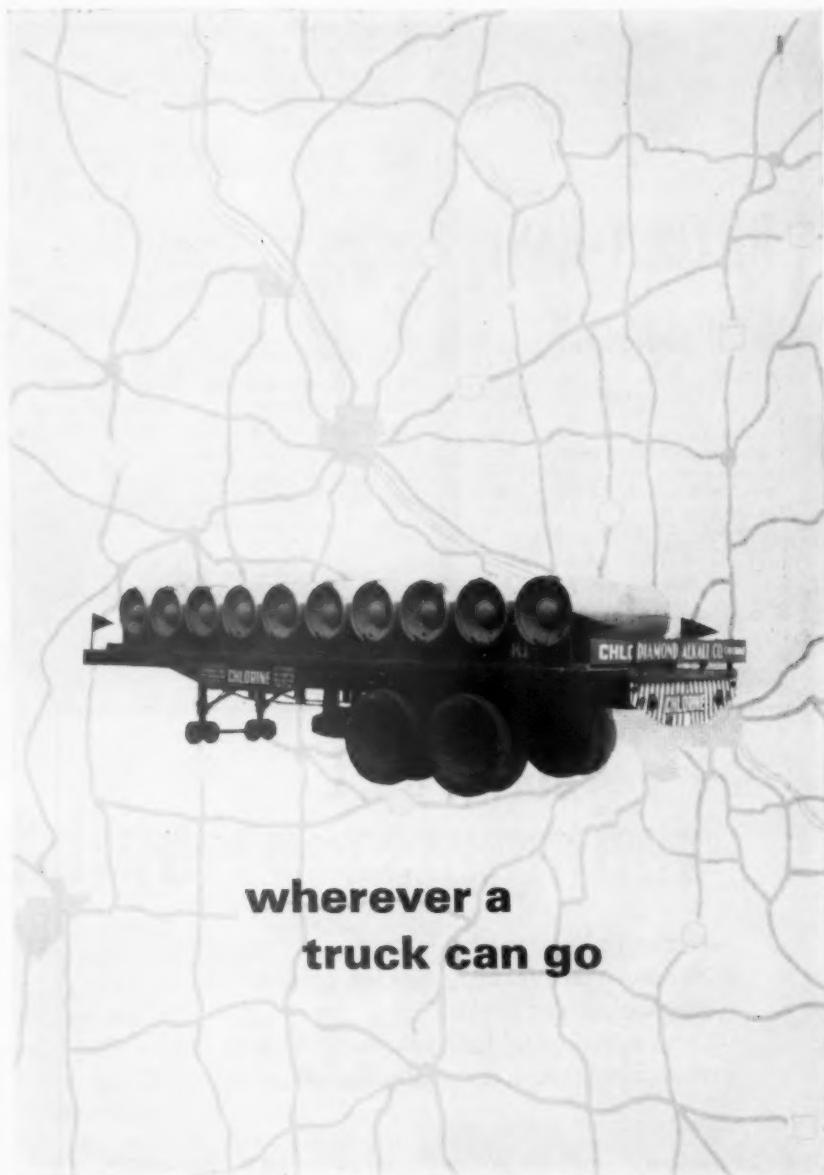
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waterway goes**



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Diamond delivers liquid chlorine safely from four strategically located plants, regularly to fit in with your production schedules and uniformly to assure you quality every time ■ DIAMOND has invested millions of dollars in "packages" ranging from 100- and 150-lb. cylinders . . . to 15 one-ton containers clamped on special flatcars . . . ton containers on special hi-way trailers . . . to tank cars . . . to 600-ton barges.

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■ DIAMOND backs up its customer's delivery service with a highly trained technical staff to answer your questions, advise you on liquid chlorine handling and economical use, and help you set up the most economical shipping schedules. For DIAMOND's Chlorine Handbook and a fully illustrated Chlorine Wall Chart, write DIAMOND ALKALI COMPANY, 300 UNION COMMERCE BUILDING, CLEVELAND 13, OHIO.



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Single \$15 to \$22 Suites to \$60
Special rates by the month or lease

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STRICTLY PERSONAL . . .

starts on p. 102 . . . of the integration expected to follow the exchange of Howard Smith and St. Lawrence Corp. shares for Dominion Tar & Chemical stock. "The wonderful character and reputation of the company will be retained," he said. Mr. Aird recently finished his 42nd year of service with the company.

Edward W. Campbell, 58, vice pres., public and industrial relations, Crown Zellerbach Canada, Vancouver, B.C., until ill health caused his retirement in 1958, died April 6. For many years he was active in labor negotiations involving the mining and pulp and paper industries.

O. H. Arnold Saari has been made mgr. industrial relations, Ontario-Minnesota Pulp & Paper Co., succeeding W. J. Windebank, who has accepted a position with another paper company. Mr. Saari will make his home in Fort Frances, Ont. He was formerly with Minneapolis-Moline Cp. in Minneapolis.

Lucien Rolland, president of Rolland Paper Co. and chairman of the executive board, Canadian Pulp & Paper Assn., conferred with West Coast members dur-

ing a visit to British Columbia in April. . . . Dr. Fran Whipple has been appointed manager, technical services, Crown Zellerbach Canada, located at Fraser Mills, B.C. . . . Harvey Whitson, traffic mgr. Crown Zellerbach Canada, has been elected president of the Vancouver Transportation Club. . . . Harold Behm, formerly with Columbia Cellulose Co., has organized Industrial Inventory Service, Ltd., in Vancouver, B.C. for warehouse services.



A. Harold Burk, vice president and woods mgr., The KVP Co. Ltd., is newly elected chairman, woodlands section, of the Canadian Pulp and Paper Assn.

John C. Scrath, formerly vice pres. and sales mgr., the KVP Co. in Espanola, Ont., is now assistant to the president, KVP Sutherland Paper Co.

Hugh B. McCaughin has been appointed maritime district sales mgr. for Westminster Paper Co.

Suppliers

John G. Hendricks moves up to director of research and development, Stowe-Woodward, Inc. He was previously with National Lead Co. in research and development.



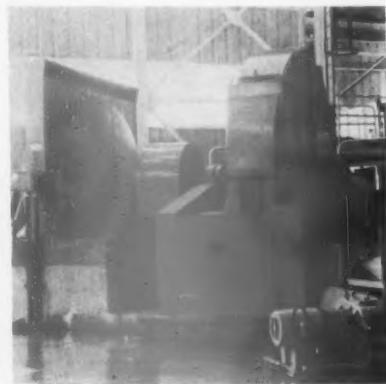
Jack M. Norlin takes over a newly created position as manager, paper mill sales, for The W. S. Tyler Co., producer of wire cloth and screens. Ty-Flex, new stainless steel Fourdrinier wire, is among products for which he is responsible.

A graduate of Case Institute, he is based in Cleveland. He formerly represented Tyler in the South. **Norman O. Weil**, vice president, for Tyler Co., no longer travels around to mills and meetings of the industry after suffering a coronary attack, but has recovered and continues to carry on for Tyler in its New York offices. His home is in Yonkers, N.Y.

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SPECIALISTS IN MODERN WOOD ROOM EQUIPMENT

- Hydraulic ring type log barkers
- Hydraulic reciprocating arm log barkers
- Mechanical ring barkers
- Drop or horizontal feed pulpwood chippers
- Horizontal feed tree length chippers



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HANSEL MFG. CO. INC.

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HANSEL ENG. CO. LTD.

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Canada

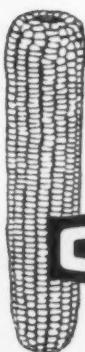


Norlin



A good line to remember

Mark this down with your lines of truth: "Coated stock with a uniform finish makes sales go up." CLINTON starches and dextrins make sure your coating is consistently smooth and free from "skips." When gloss printing quality and strength count most, use CLINEO starches. And, to improve all-around printability and control curl, specify CLINICAL starches (they contain their own lubricants). With these starches, you can select from many varieties. Customers and prospects who judge paper on its face value can see and feel the difference when you use CLINTON coating starches.



Technical service
always available

CLINTON CORN PROCESSING COMPANY

CLINTON

CLINTON, IOWA

Celgar: Equipment suppliers, men who make the mill work

Digesting: digesters, steaming vessels, Kamyr Inc.; tanks, Horton Steel; pumps, Bingham Pump Co.; ventilation and exhaust systems, SF Products.

Brown stock: washers, deckers, Sherbrooke Machineries Ltd.; tanks, Horton Steel; Cowan screens, S. W. Hooper & Co.; centrifugal cleaners, Canadian Ingersoll Rand; disc refiner, Sprout, Waldron; bleach liquor oxidation plant, Lundberg Ahlen; pumps, Bingham Pump; ventilation and exhaust systems, SF Products; high density tank agitator, Greey Mixing Equipment Co.; horizontal agitators, J. Brinkley Co.

Bleach plant: washers, deckers, Sherbrooke Machineries Ltd.; tanks and towers, Horton Steel; high density storage tank, Canadian Wood Pipe & Tank Ltd.; screens and centrifugal cleaners (Bird), Canadian Ingersoll Rand; chemical plant equipment, Electric Reduction Co.; 32 ton overhead crane, J. T. Hepburn Ltd.; pumps, Bingham Pump; ventilation and exhaust systems, SF Products; high density tank agitator, Greey.

Recausticizing: lime kiln and auxiliary equipment, F. L.



MORNING CONFERENCE is conducted by E. Gene DeLuca, mill mgr., at head of table. From left: O. T. Dalley, tech. supt., John T. Hageman, prod. mgr., J. E. B. Sawyer, proj. mgr., N. A. Scott, industrial relations supt., F. Waite, mgr. of accounting.

Smidth: Peabody scrubber, Peabody Engr. Corp.; hot lime bucket elevator and conveyor, Jeffrey Mfg. Co.; slakers, causticizers, clarifiers, filters, washing, Dorr-Oliver Long; tanks, Horton Steel; lime rock conveying system, Rader Pneumatics; pumps, Canadian Pumps Ltd.; ventilation and exhaust system, SF Products.

Machine room: Fourdrinier and press section, John Inglis; vacuum pumps, Roots-Connersville; Harland drive, Bepco Canada; Flakt dryer and auxiliary equipment, SF Products; broke beater, Black-Clawson; finishing line, Lamb-Grays Harbor; baling presses, United Steel; turntables and bale tyers, Tennant Corp.; 25 ton overhead crane, J. T. Hepburn; blending tank, Canadian Wood Pipe & Tanks Ltd.; pumps, Bingham Pump; ventilation and exhaust systems, SF Products; M.G. sets and motors, Canadian General Electric.

Recovery boiler: chemical recovery unit (1,800,000 lbs. solids/day, 224,000 lbs. steam/ . . . turn to p. 112



ENGINEERING DEPARTMENT includes (from left), J. C. Enevoldsen, chief proj. engr., R. W. Sweeney, senior proj. engr., W. T. S. Pearce and E. H. Jackson, proj. engrs.

Replacement Screen Cylinders



to fit: SHARTLE - 24P Selectifier Screen

1. Completely interchangeable with your present screen plates.
2. Manufactured in all standard Shartle hole diameters and gauges of material.
3. Available in Type 316 Stainless Steel, Monel and Inconel.
4. Sold directly from the manufacturer through your Morey Paper Mill Supply sales representative.

Liberal discount by exchanging your old cylinders complete with rings.

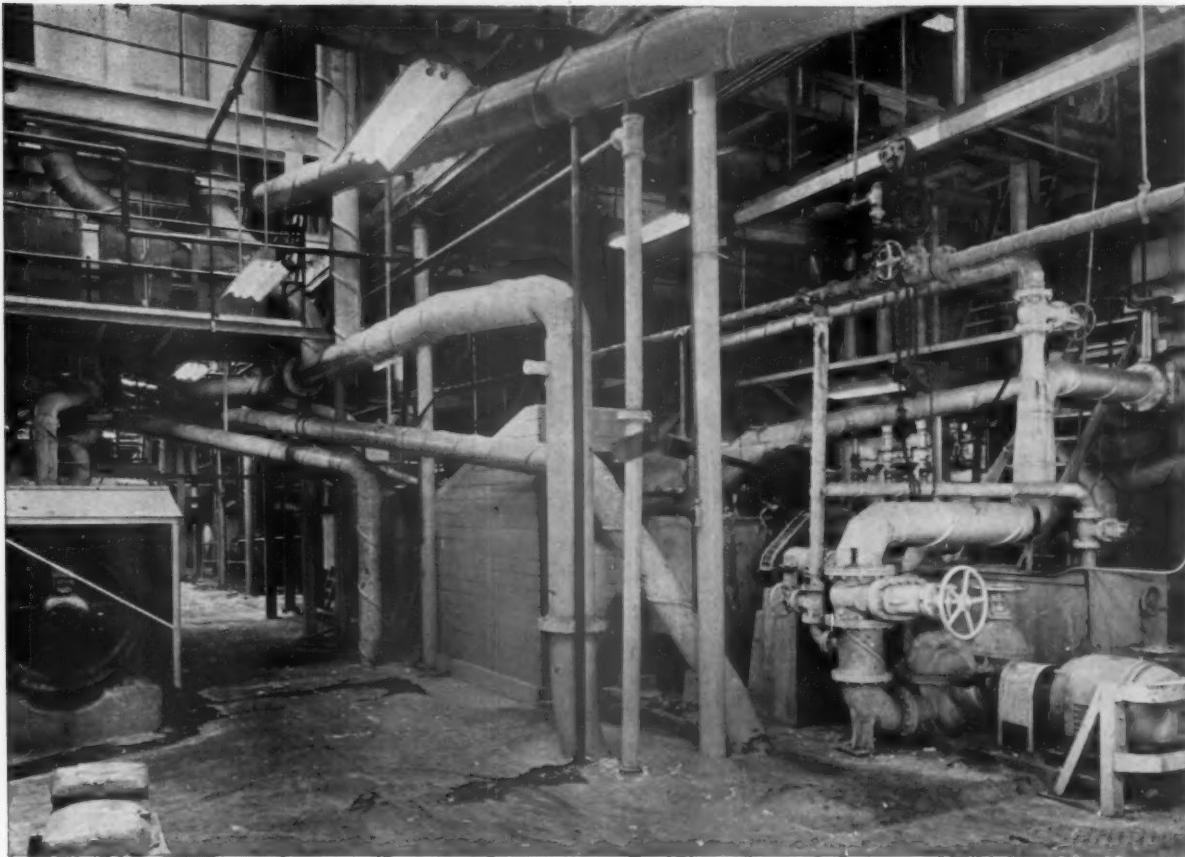
Write for descriptive material.

NATIONAL PERFORATING CORP.

SUBSIDIARY OF FITCHBURG SCREEN PLATE CO.

301 SOUTH STREET, FITCHBURG, MASSACHUSETTS

Simple or Complicated Piping...



NAYLOR Fabrication Service Can Meet Your Most Exacting Needs

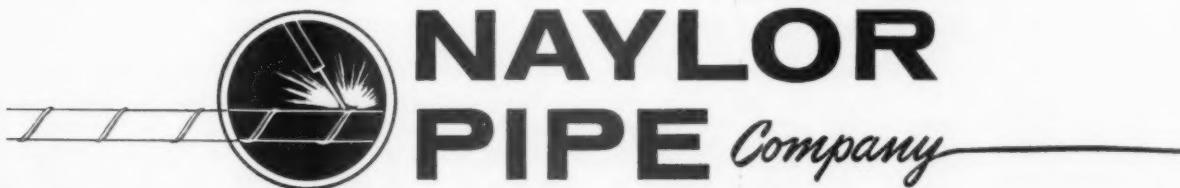
When you need pipe, fittings or special fabrications . . . in carbon steel, stainless steel or alloys . . . it will pay you to call on NAYLOR fabrication service.

You can depend on close-tolerance production to your exact specifications, assuring a perfect fit whether your layout

is simple or complex.

Pipe sizes range from 4" to 30" in diameter and wall thicknesses from 14 to 8 gauge. Special piping fabrications from 3" to 44" in diameter and wall thickness up to $\frac{3}{8}$ ". Standard fittings are available from stock.

Write for Bulletin No. 59 or send specifications for quotation.



1271 East 92nd Street, Chicago 19, Illinois

Eastern U. S. and Foreign Sales Office: 60 East 42nd Street, New York 17, N. Y.

What eliminates the problem of paper slippage?

What takes less material than less effective methods?

What saves packaging time?

ANSWER...

Compression Strapping the Signode Way

The Signode way has four parts

- 1.** 20,000 pounds of compression
- 2.** A Signode developed strapping pattern that gives maximum security, yet probably takes less strap than you are now using.
- 3.** A Signode developed skid top that is different from others in several important details. Adds no cost.
- 4.** Strapping station procedures and arrangements worked out with your people, that further reduce your costs by effecting important savings in wrapping and strapping time.

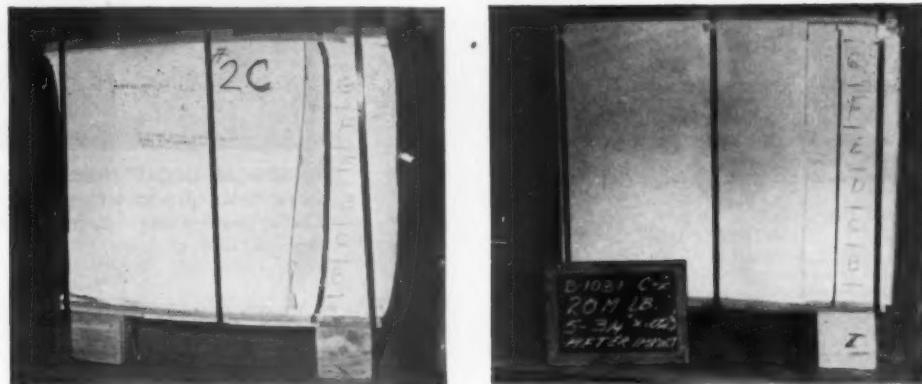
Besides eliminating damage to your paper caused by slippage, and saving you materials and man-hours, the Signode way lets you save much valuable floor space. You can stack paper skids three or four high, yet the straps on the bottom skids stay tight, thanks to 20,000 pounds of compression.

Inseparable from the method is the Signode equipment that has been developed for this method, but the virtues of this dependable equipment must be, for present purposes, another story.

Your customers benefit as much as you do, but in different ways

- They receive more usable paper per skid—it's all usable instead of some of it or most of it. No waste of top or bottom sheets because of wrinkles, ragged edges, or cleat marks.
- They use the paper as it comes off the skid. No restacking. And 20,000 pounds of compression helps greatly in stabilizing moisture content.

The Signode way is proved effective. Hundreds of tests have been made by Signode



- Here are two snapshots from one of scores of reports made to our customers. We will concede that our engineers are better at testing than at photography, but we hope you can see the slippage after impact in the skid strapped the usual way—six straps and no compression—and the absence of slippage in the skid strapped the Signode way with 20,000 pounds of compression.
- Here is a chart that summarizes the results of hundreds of tests. It shows why Signode says that, at worst, paper slippage is reduced to such an inconsequential amount that it is no longer a problem. In most shipments, there isn't any slippage.

No compression	Slippage 1-1/4" (40/32")
10,000 lbs. compression	13/32"
20,000 lbs. compression	Slippage 3/32"

On what do we bias our opinion?

Forty years of working with the paper industry. Persistent development work. Continuous improvement in packaging and carloading methods. A well-equipped laboratory. Long-term field engineering (at our expense). And the full scale Signode railroad test track...with inclined track and instrumented and photographic recording equipment. (Worth seeing!) And the experience of a growing list of users of this comparatively new compression strapping method.

A see-it-yourself program

Signode is now extending to paper mill people a see-it-yourself program that includes putting your paper on your skids through extensive tests in your presence. This takes some arranging and scheduling. We hope you are interested and will write to us for full details. Please address Department P.



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... Celgar equipment

continued from p. 108 . . . hr., 600 psi, 750° F) Combustion Engr.; steam air heater, American Standard Products; steam soot blowers, Diamond Specialty Corp.; F.D. fan, Jas. Howden & Co.; I.D. fan, American Standard Products; liquor pumps, Canada Pumps; chemical ash tank pumps, De Laval Co.; precipitator, Research Cottrell; precipitator breeching, Vancouver Iron & Engr. Co.; storage and dump tanks, salt cake silo, Horton Steel Ltd.; salt cake handling system, Young Mech. Co.; sextuple effect evaporators, Chicago Bridge & Iron.

Power boiler: dust collector, Precipitation Co. of Canada; steam generator (285,000 lbs. hr., 600 psi, 750° F), Foster Wheeler Co.; water treatment system, Cochrane; deaerator, Graver Ltd.; boiler feed pumps, Klein Schanslin & Becker; steam turbine drives, Canadian Westinghouse Co.; air compressor, Canadian Ingersoll Rand Co.; soot blowers, Diamond Specialty Corp.; gas burners, Peabody Engr. Corp.; F.D. fan, I.D. fan, Jas. Howden & Co.; F.W. transfer pump, Birmingham Pump Ltd.; hog fuel feeders, H. A. Simons; chemical feed system, Greey Mixing Equipment Co.; barker pumps, Klein Schanslin & Becker; fire pump, Peerless Pump Co.



MAINTENANCE GROUP (from left) A. J. Saarikko, maint. supt., M. L. Rush, elec. supt., D. M. Morrison, instrument supt., M. I. Simpson, H. C. Hutchison and E. G. Baillie, mechanical trades foreman. (R. J. Sanvido, maintenance co-ordinator, not present for photo.)

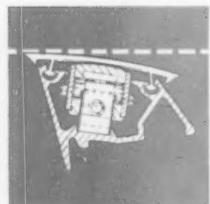


TECHNICAL GROUP (from left) O. T. Dalley, tech. supt., Dave Amos, process engr., Murray Little, statistician, Ray Chalk, process engr., Bob Friesen, control engr., Bud Allingham, sr. technician.

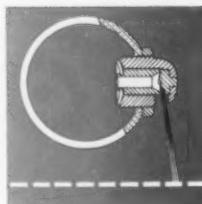
Electrical: main switchboard, Canadian Westinghouse Co.; power transformers, Bepco of Canada; 550 volt distribution centers, Federal Pacific; motor control centers, Canadian Controllers (from Railway & Power Engineering Corp. Ltd.); "Teck" 600 volt cable and primary 15 kv cables, Northern Electric Co.; machine drive electrical helpers, Bepco of Canada; motors, Canadian General Electric; cable trays, Pioneer Electric.

Woodroom and chip handling: log bundle crane, Colby Crane & Mfg. Ltd.; 30" and 42" hydraulic ring barker, 112" horizontal 9-knife chipper with 1250 hp motor, 154" horizontal 6-knife chipper with 1500 hp motor, Hansel Engr. Co. Ltd.; Montgomery hog with 300 hp motor, Jacksonville Blow Pipe Co.; 51" bark press, Fibre Making Processes Inc.; woodroom log handling equipment, Letson & Burpee Ltd.; chip screens, Thomas A. Dillon Ltd.; 36" 10-knife rechipper, Canadian Sumner Iron Works; chip blowing system with 300 hp drive, Rader Pneumatics; Scoopmobile (capacity 15,000 lbs.) for chip handling, Mixermobile Mfrs. Inc.; belt conveyor equipment, idlers, Forano; belt conveyor equipment, belt, Hewitt-Robins; worm gear reducers, Radicon; parallel gear reducers, Forano.

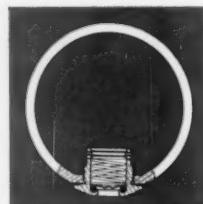
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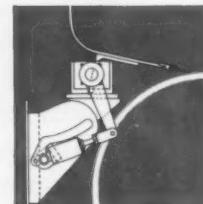
Wire doctors



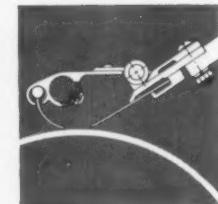
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Fresh water showers



Doctors



Fuzz removers



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Stationary

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Showers (White
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Wire doctors

Wire doctor boxes
Steam Showers

PRESS SECTION
Press roll doctors
Felt showers

Replacement blades for all doctors



STEAM RECOVERY DEPT. (from left) Evan Moore, power boiler engr., James Tidball, recovery engr., Don McIntosh, foreman, Joe Lazier, Combustion Engineering field engr., Herb Pugsley, foreman.

... Wisconsin cooperative lesson

continued from p. 65 . . . more in taxes than any other state — \$105,000,000. Capital investment is almost \$900,000,000 and salary figure is \$225,000,000—both tops for all state pulp, paper and board producing states.

In 1960-61 this is what Information Service achieved: Its Papermobile traveling exhibit got a "truly wide exposure" educating Wisconsinites as to pulp and paper processes; A broad program of travel for the Papermobile is planned for the next year. Pamphlets and other materials sent to teachers—these were up-dated and expanded.

The Workshop mill and community relations problems of the past year—each discussed at one session—were charitable contributions, long service recognition, school relations and there was a three-day session at the Trees for Tomorrow Camp. Each year the Information Service selects similar subjects for the Workshops.

It has started a new project—formation of a speakers bureau. Several companies have responded by offering to provide speakers.

Key to all this is cooperation among the mills, said Mr. Schulenburg.

His final word might be taken as a bit of good advice to other pulp and paper states who would emulate Wisconsin in its many forms of industry cooperation for the common good: "We can be successful only so long as our individual members will share the work."

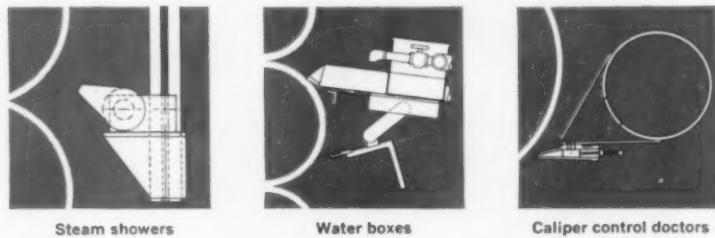
Elected as successor to Mr. Schulenburg was Samuel A. Casey, executive vice president of Nekoosa-Edwards Paper Co. New vice chairmen are D. J. Duglie, vice pres. and general manager of Scott Paper's Wisconsin mills, and John Reeve, executive vice pres., Appleton Coated Paper Co. Donald Lichy, Nekoosa-Edwards, was elected treasurer. Tom E. Branagan was re-elected manager. ■

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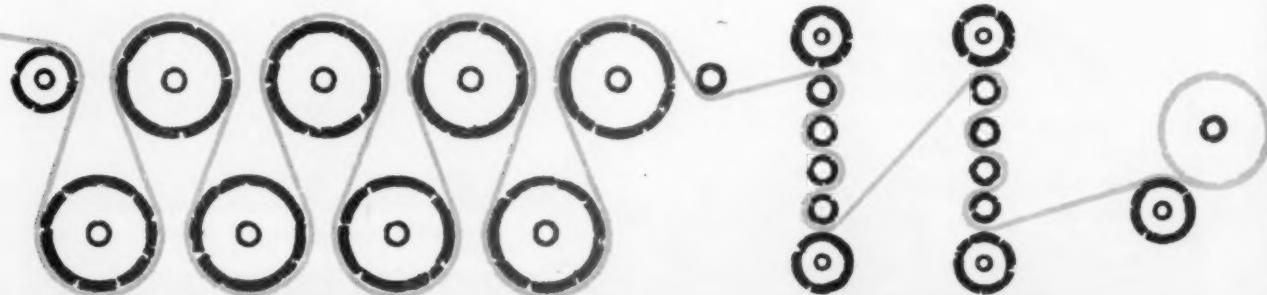
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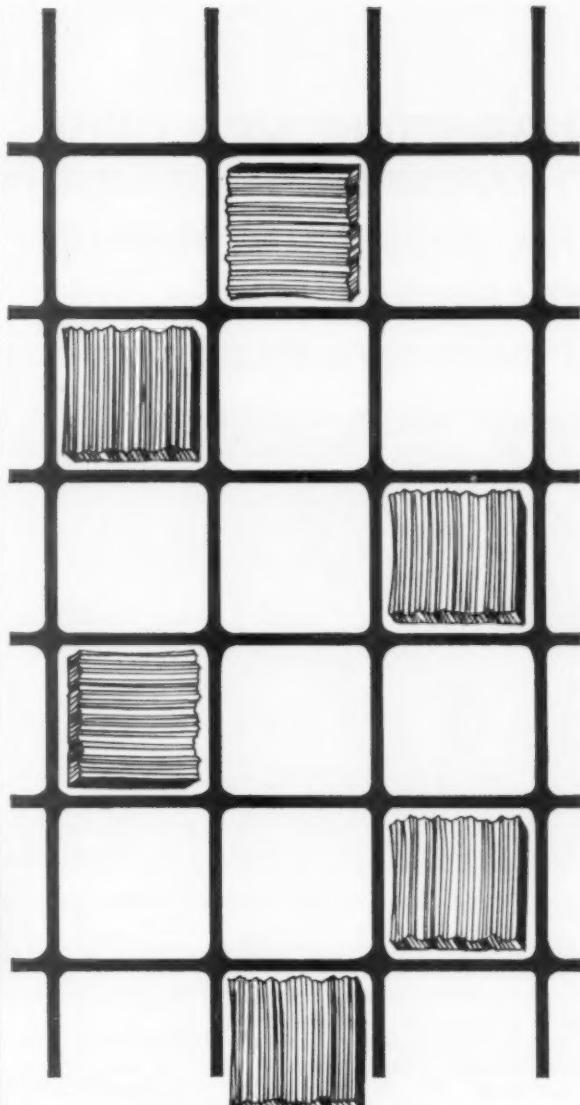
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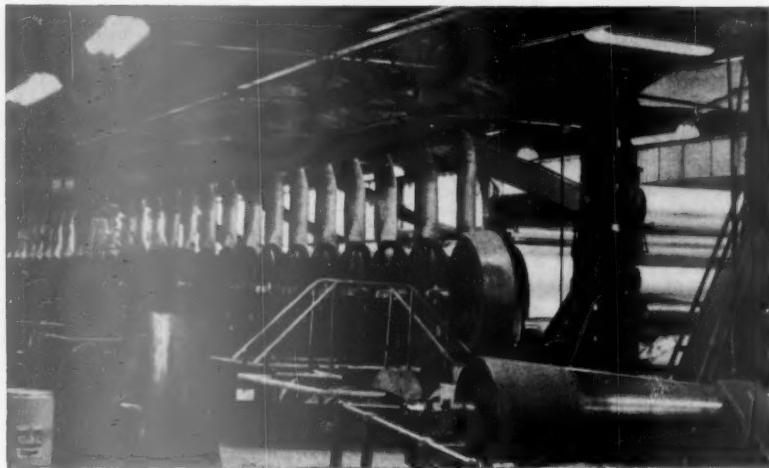
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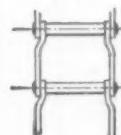
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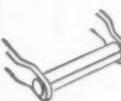
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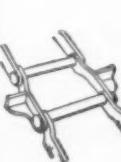
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MILLER FREEMAN PUBLICATIONS

The last word

Yonkers Retirement Party—

Charles A. Yonker, for 45 years the purchasing agent of Allied Paper Mills, was given a retirement party which will long be remembered in Michigan's Kalamazoo Valley.

A hundred of his close friends in the industry and allied activities were on hand at the Kalamazoo Country Club. Ed Woodruff, purchasing agent of Kalamazoo Paper Co. was in charge of arrangements. Olin Callighan of Minerals & Chemicals Corp. of America, was the toastmaster. Donald G. Knight of Bulkley Dunton Pulp Co. was in charge

of the menu—"Grand Soiree pour Charles." Steaks, of course.

Robert Krudener wrote a poem for the occasion. In part it contained this verse:

"When he sat behind mountains
of papers,
He was alert, watching salesmen's capers—
And when they said 'our price
is right',
He did not take the bite—but
In his swivel chair,
At the ceiling he would stare."
A farewell present for Mr. Yonker
—a Ford car.

On, Wisconsin! Private Enterprise at Its Best

A visit to the pulp and paper communities of northern Wisconsin in the early summer has many compensations. You may come home with an aged cheddar cheese, or perhaps a sausage, well wrapped and insulated. You may have time, between mills, for golf or wetting a fishing line—and if lucky, maybe catch a basket of thrashing Northerns or Walleyes. You really have "made the club" if you can outsmart a Muskey.

But if you don't have time for all these pleasures, as on a recent foray into the Badger State by an editor, there's a lot of satisfaction in just observing the papermaking people of that state in action in the greatest concentration of paper mills in the world.

In the forepart of this issue, we report on the remarkable record these Wisconsinites have established in cooperative enterprises. A community relations program which has been copied, with varying success, in many other paper industry areas, was launched there ten years ago by Nathan Bergstrom, Joe Schulenburg and the late Joe Conway.

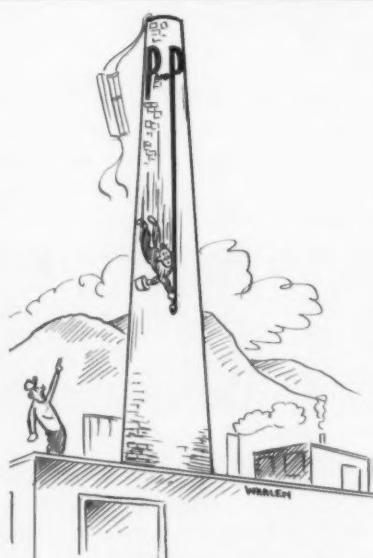
Mr. Conway and others created a new approach to the decades-old pollution problem, accenting the positive instead of the negative. Folke Becker was the leader in founding Trees for Tomorrow, Inc., which was coaching and assisting small farm lot owners to grow tree "crops" long before other groups, government or private, got into the act.

Even the Institute of Paper Chemistry, which now belongs to the entire American industry, was started by Wisconsin companies, led

by Ernst Mahler.

Top management of Wisconsin mills just doesn't start these things, and then stay home. Its active interest and participation in all of these activities continues unabated. You will see owners and presidents at community relations meetings, at camps for pulpwood growers, at The Institute and research center.

You may not always have the time for golf or fishing, but if you are a devotee of private and free enterprise in all of its better aspects, you will surely be more than rewarded for your trip in seeing how well it works in Wisconsin.



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